ESTONIAN UNIVERSITY OF LIFE SCIENCES

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PARK USE IN TEHRAN, IRAN DURING THE TIME OF THE COVID-19 PANDEMIC

PARGI KASUTAMINE TEHERANIS, IRAANIS, COVID-19 PANDEEMIA AJAL

Master's Thesis

Curriculum in Landscape Architecture

Supervisor: Professor Simon Bell, PhD

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Tänapäeva maailmas on elu määratlusel inimeste jaoks teine tähendus. Aeg ja koht on leidnud uue eesmärgi ning linnaelus unustusse jäänud paljud kohad, sealhulgas avalikud haljasalad, pargid jne. Siin on aga küsimus- kuidas inimene saab sellistes tingimustes tervena püsida? Eriti suurtes linnades on näha, kui palju püüavad inimesed kvaliteetset elu elada. Järsku siseneb võrrandisse katastroof, mis mõjutab kogu inimese elu ja tegevust. Covid-19 on suunanud inimeste tähelepanu väheväärtuslikele ruumidele (eriti suurtes linnades). Inimesed on leidnud tihedamat kasutust nendele (näiteks haljasaladele ja parkidele) pideva vaimse ja füüsilise tervise ning stressi leevendamiseks. See lõputöö vaatleb Teherani parke ja nende kasutamisest Covid-19 tingimustes ning nende funktsioone. Sel eesmärgil vaatasin 14 erinevat parki (linna-, kohalikke ja naabruses asuvaid või taskuparke). Nende valim on 60 Teherani elanikuga läbi viidud veebiintervjuude tulemus. Uurimistöö käigus on neid parke külastatud virtuaalselt. Nende kaarte ja asukohti on intervjuude põhjal analüüsitud järgmistel teemadel: taimestik, juurdepääsetavus, ohutus, avaliku ala kvaliteet, tegevused, potentsiaalid ja kasutaja taju Covid-19 ajal. Selle tulemusel võrreldakse nende väärtusi. Valitakse halvimad ja parimad juhtumid (pargid) - kõiki kohti hinnatakse üksikasjalikult, näiteks ajalugu ja nende rolli ühiskonnas olukorras Covid-19. Lõpuks annan parima soovituse parkidele ja avalikele haljasaladele, mille eesmärk on linnaelanike tervis ja heaolu konkreetses olukorras.

Märksõnad: pargid, COVID-19, linn, park, taju, tervis ja heaolu

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Abstract of Master's Thesis

Author: **Mana Taheri Talesh**

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In today's world, the definition of life has a different meaning for people. Time and place have found a new purpose, and in urban life, people have forgotten many elements, including public green spaces, parks, etc. But the argument here is how a person can stay healthy in those conditions. Especially in big cities one can see how much people try to have a quality life. Suddenly, a catastrophe occurs that affects the whole process of human life and activities. Covid-19 has increased people's attention to low-value spaces (especially in large cities). In contrast, humans now use these spaces (such as green spaces and parks) as a point of need for continued mental and physical health and stress relief. This thesis is about studying parks in Tehran and their use in Covid-19 conditions and their function. For this purpose, I looked at 14 different parks (urban, local, and neighbourhood or pocket parks). The selection was the result of online interviews conducted with 60 residents of Tehran. For this research these parks have been visited virtually. Their maps and locations have been examined based on interviews in the following cases: vegetation, accessibility, safety, quality of the public area, activities, potentials, and user's perception during Covid-19. As a result, their values are compared. The worst and best cases (parks) are selected—all places evaluated in detail, such as history and their role in society in the Covid-19 situation. In the end, I will give the best recommendation for parks and public green spaces, the purpose of which is the health and well-being of the city's residents in the particular situation.

Keywords: park, covid-19, city, perception, health and wellbeing

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1. CHAPTER ONE: INTRODUCTION

1.1 **Overview**

In December 2019, the Covid-19 struck, bringing unimaginable disaster to many countries. The disease quickly spread to affect multiple aspects of people's lives, from everyday life to cultural social habits. It changed the colour of societies and human routine like a strong wave. Along with its spreading, it created fear, despair, and helplessness. In this regard, the reactions of each community to this issue have been different and these differences have been experienced to a greater degree in large cities (Xie et al. 2020). The level of anxiety was palpable in this epidemic and severely curtailed the mobility of people in each community. In Canada, research (Lesser and Nienhuis 2020) shows that 22.4% of previously active people became more sedentary, while 33% of previously inactive people became more active. This research showed that people who are more active outdoors had less anxiety, compared to people who did not use the outdoors. In many countries, research (Lesser and Nienhuis 2020)has explained that outdoor physical activity is strongly associated with well-being, so there is a need to experience the outdoors. According to the Statistics Office of Iran ("Progress and Challenges in Addressing Iran's Aging Population | Eghtesad Online" n.d.), Tehran has 1.8% more elderly people than in the rest of the country. To promote a healthier lifestyle, we must take a look at the open spaces of Tehran, what qualities can contribute to keeping the elderly population safe and secure in these places. Many large and small parks exist in Tehran and their functions differ. These different functions provoke different reactions within the community, such as feelings of insecurity and inconvenience toward open green spaces in terms of design and facilities. The statistics ("Progress and Challenges in Addressing Iran's Aging Population | Eghtesad Online" n.d.) obtained in Tehran show this is not just an issue for the elderly population, but also showed that many young people have reduced the amount of time spent in the parks. In many cases this was due to high anxiety and insecurity seen in the young population, this is despite their perception of parks as having a more favourable atmosphere for socialising. Tehran has many different parks (urban, local, neighbourhood or envelope), this study has been conducted into how these spaces can provide a welcoming atmosphere by their design in the Covid-19 situation and to what extent they can provide a level of well-being.

Despite the large differences between many green spaces in Tehran and the varying social and demographic context, the need for green spaces remains the same. But here must consider how ready the community is to change. According to interviews, the residents of this city have an inner fear of an overall change in these spaces, and they are more in favour of temporary changes that can solve current issues under special occasions, for the sake of wellbeing.

1.2 **Aim of the study**

The purpose of these studies is to find and evaluate the general problems of location and evaluation of the performance of Tehran parks in the conditions of the covid-19 epidemic that people suffer from disease transmission and have many restrictions from the government. This thesis aims to provide programs and recommendations that consider the needs of the current society of Tehran, including the needs of all social classes.

1.3 **Objectives**

Main goals of the study are summarized as following:

I. To explore the role of parks in Tehran during the Covid-19 lockdown in three waves in contributing to the people's health and well-being.
II. To examine the characteristics of the green areas and parks used in three waves in terms of their suitability for maintaining health and well-being.

1.4 **Research questions**

To achieve our goals and objectives it is necessary to ask the following questions:

I. How did people use green areas and parks in Tehran during Covid-19 lockdown from the first wave to the 3rd wave?
II. Did they use the different parks in the same way or differently?
III. Which parks did they visit / did they visit more or less than before?

IV. What kind of activities did they do there?
V. How did they feel about it? (mental well-being, safety)
VI. Are the parks suitable and satisfactory for people?

1.5 Significance of the study

The most prominent part of this research is based on people's reactions to green spaces, including parks. What is the function of these spaces in the current situation and how do people react and behave in return? These responses will have different aspects, not only depending on the facilities that the park provides to society but also depending on the feeling it creates in the visitors. Here, the focus of this research is on measuring and analysing the sense of safety, comfort, and satisfaction of visitors to assess if the community's needs can be obtained from parks and the effect of these spaces on individual's health and well-being during the different waves of Covid-19 Pandemic. These studies have been conducted not only in the main parks of the city but also in local and neighbouring parks.

1.6 Organization of Thesis

The presented thesis is about park use during the Covid- 19 pandemic and is organised into five chapters. Below is a brief explanation of each chapter.

Chapter one is an introduction to the main topic of this thesis which summarizes the entire thesis. In this section, all the research objectives and research questions are stated, along with a summary of all the chapters. **Chapter Two** is the literature review of the thesis. It explains the role of parks, their function, quality, and activities included, not only at the urban level but also at the local and neighbourhood level. It represents the feelings and lifestyle of inhabitants during the Covid-19 related to their use of the parks, using case studies to understand the role and functions that parks play. **Chapter Three** shows the methods used in this research to achieve the research objectives.

The main research method is based on online interviews and steps include collecting information and comparing the data, and the results of the interviews lead to the list of places and describe them. **Chapter Four** shows the results. This chapter connects the research up to

the third chapter. Here, with a complete list of the parks under study, their details and definitions are discussed to find out essential factors to describe the best- and worst-case studies in the study location. It should be noted that in this section the goal is not just to define the parks listed in one location. Rather, they are generally examined in three different phases that show how the parks were able to meet the different needs of society in the different waves of Covid-19 pandemic. **Chapter Five** reflects on the main findings of all the research. The discussion outlines the advantages and disadvantages of parks in terms of design and facilities to provide better conditions. In this section, the results from the previous chapter will be used to provide justification for the recommendations to improve conditions required to meet the needs of society under these specific circumstances.

2. CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this research, the role of urban parks and their impacts are discussed. In the first stage, the function of urban green space is considered and whether the facilities provided are flexible enough to meet the varying needs of society, and then we will deal with the interaction between the society and these spaces. In the daily life of human beings in any society, open urban spaces, especially green spaces, with their special function, can meet the basic needs of residents contributing to their health and well-being. In the following thesis, the quality and purpose of parks are discussed, and examines what aspects of the design of these spaces attracts residents to them and how they influence the residents' health. This is where the impact of parks and green space on individual feelings come into play. Feeling of health, wellness, safety, and tranquillity are the main topics that are the direct impact of urban green spaces on users. This perspective is examined in this thesis using case studies, especially in relation to the Covid-19 pandemic and the benefits spaces provided to society, how it created a new interaction and changes in lifestyle. Along with how it can influence and change the feeling of satisfaction and safety.

2.2 **Urban Parks and Green Spaces**

Urban parks are one of the most important components of urban public green space and a public place where many urban residents choose to engage in outdoor activities ((L. Zhang et al. 2020) With the expansion of cities, urban dwellers need urban green spaces to balance their busy and polluted lives. Urban green spaces have been associated with the well-being of city dwellers. However, there is limited evidence on the characteristics that green spaces should have in order to provide real benefits(Ayala-Azcárraga, Diaz, and Zambrano 2019). According to urban planning in each country, it can be said that urban green spaces also have categories. As mentioned, the design and facilities of green spaces cannot fully meet the needs of residents. On the other hand, the shape and type of parks are based on each region's needs, such as their need for activity and maintaining health (“Types of Parks | DPLA” n.d.). Now we can take a brief look at some types of urban parks.

2.2.1 Town Square

Since the emergence of cities in the earliest days in Europe and the United States, the first examples of public space or public greens were the city squares (“Types of Parks | DPLA” n.d.). These squares, often located in the heart of the city, were very popular places for public gatherings or ceremonies. With the expansion of urbanization, most urban squares have evolved into large spaces such as parks, which may also have halls and entertainment spaces. Due to the good access to these spaces, they have been expanded for public use and some of them can be called a complete park with all facilities. In a study by (Bao, Wang, and Wang 2012) in China, they showed there was a high degree of fragmentation between green spaces and residential areas, also between green spaces and streets or squares and finally between different green space. The main reason for this fragmentation is the expansion of urbanization and to improve it, they presented a targeted method to improve urban living environment with centrality and rational design of green space.

2.2.2 City and Cultural Parks

Ironically, the parks we now call central or urban parks were often originally called "rural" or "country" parks. These parks were created in the late 1800s or early 1900s on the outskirts of urban areas (“Types of Parks | DPLA” n.d.). These parks, often located outside of cities, were on unused land open to the public. But over time, as urbanization expanded and were changed in response to urban life, this became a problem for park designers. For they always thought that by creating these spaces they could provide a replication of rural life in cities. The habit of urban life is a relatively new issue and has reduced the contact that people have to nature and green space. For this reason, city parks have social and cultural attractions that are important landmarks in any city. A study conducted in one of Chicago's most famous parks (Jackson Park) found that factors such as the connection between economics, landscape, and property values create green spaces that reflect a cultural reform of how the green spaces are perceived (Loughran 2020). This cultural reform is a tool that can be used in the community to reduce social crises.

2.2.3 Neighbourhood Parks

While in the 19th century there were calls for a park distribution plan, Urban parks flourished in developing cities. But as time went on, the increase in residential development and the onerous and busy lives of the people in the city made it very difficult for the cities’ residents to find the time to seek out green spaces (“Types of Parks | DPLA” n.d.). Therefore, people thought that small local parks might be able to maintain the value of the neighbouring land. It was thought that the parks would add to the recreational attraction of the area by decreasing pollution in the cities, and thus improving neighbourhood health and reducing community concerns. An analysis conducted (Zhai et al. 2020) in Shanghai examining 15 local parks showed that these spaces contributed a lot to the health of the elderly, with greater positive feedback if the park had more appropriate outdoor fitness equipment.

2.2.4 Pocket Parks

The term "pocket parks," coined in the 1960s, refers to small areas (usually less than a quarter of an acre) and public access points that usually provide green space, a place to sit outside, and sometimes a playground for children. They can be located on undeveloped lots or as part of the public space requirements for a large development. Many studies have shown that pocket parks, when perceived as attractive and safe destinations, encourage residents to be more physically active with their children (“Types of Parks | DPLA” n.d.).

2.2.5 Temporary Parks

Many studies have focused more on traditional and permanent parks, and little is known about temporary urban parks. Tactical urbanization uses low-cost, rapid, and quick changes in the environment built to "make a small part of the city more enjoyable" and show residents and decision-makers potential progress if these changes are permanently approved. They define "temporary or permanent conversion of low-consumption [urban] spaces into community gathering areas through beautification."(Salvo et al. 2017). In the discussion of temporary parks, the recovery of public spaces is considered. These parks are usually located in urban areas where urban parks are rarely located, like abandoned or unused land. Temporary parks are generally small and contrast with the built space, which can help increase the people's physical activity in that area, along with the pleasant beauty that it can give to the city view, physical activity in that area, along with the pleasant beauty that it can give to the city view.

2.3 Impact of Parks and Green Spaces on Large Societies

The influence of parks and urban spaces in large communities is a direct one. This is because these spaces play an important role in the health of the city and the community. Urban parks provide several intangible benefits to human health and well-being. Measuring these "intangible" benefits, which mainly come from the spatial interaction between residents and urban parks, is crucial for the management of urban green spaces (Zhu et al. 2020). According to research conducted in China, the results showed that the quality of the overall

environment, green spaces and facilities of the park has a positive effect on improving the physical and mental health of residents (Wang et al. 2019). It should be considered that urban green space not only improves the health of residents, but also improves the health of the city by providing some essential aspects, such as outdoor activities, a better climate etc. To better understand the significance of these effects, we will further consider each of these aspects.

2.3.1 Outdoor Activities

In the idea of new urbanism, the focus is on the relationship between human perception and the environment, which provides a new understanding of the relationship between landscape and human activities. Research (Liu et al. 2020)in China has shown how the elements of the earth affect people's well-being and activities.

Research has highlighted how physical activity affects people's mental health. A study conducted in China shows that the average level of physical activity is 92.7 minutes, moderate to high intensity per day. This depends upon the distance of the park, which is usually within 500 meters from the house. These activities have a profound effect on mood, energy level and even self-confidence (Y. Zhang and Li 2017)

2.3.2 Health and Wellbeing

Mental health is one of the most significant issues in the world. In 2004, the World Health Organization (WHO) emphasized that mental health is not simply the absence of mental illness and described positive mental health as the foundation for well-being and effective functioning of both individuals and society. Getting out of the house and having access to nature is intuitively associated with mental wellbeing, and there is now considerable evidence of a link between nature and mental health (Sullivan, Kuo, and DePooter 2004; Kaplan 2001; Bratman, Hamilton, and Daily 2012). According to many of these studies mentioned, contact with nature repairs and reduces stress and increases social interaction leading to improved social relationships. It can be said that in many of these measurements, the distance to parks and engagement of people with green spaces is also considered. On average, people who live

in urban areas with more green space have both lower psychological stress and greater well-being(White et al. 2013).

2.3.3 Climate (pollution)

As urbanization expands, air pollution and urban heat increases caused by construction and road traffic. By 2050, outdoor air pollution is estimated to double premature deaths to 6.6 million per year worldwide (Lelieveld et al. 2015). One of the solutions that helps to control these conditions is blue and green infrastructure that reduces air pollutants. This reduction can be done directly by deposition on the tree surface and / or adsorption through stomata in the leaf surface has holes. The shade provided by trees on built surfaces and/or the cooling effect of the water can reduce extreme air temperature and alter the microclimatic conditions of their environment (McDonald et al. 2016). Understanding the different compositions, structures, and types of vegetation that provide air purification and climate regulation will help improve and optimize local planning and green space management for these important ecosystem services in the urban context (Vieira et al. 2018)

2.4 Functions of Human Senses Towards the Parks

Urbanization brings with it many challenges. In big cities, besides pollution and traffic, there is insecurity and crime in some areas. People living in developing cities are heavily involved in busy urban life and are far away from nature and tranquillity, which in turn brings problems that affect the health of society. In research conducted in Portland, time spent in natural environments has been shown to have a positive effect on psychological well-being, such as reducing anxiety and improving concentration (Baur 2011). The positive effect that natural environments or green spaces have on people is due to the presence of natural elements and the structural composition of those elements together. Feelings of satisfaction, well-being and safety are very important human feelings and contribute to the overall health of the community and residents when provided at the local level. Below is an explanation about each of these human feelings and how green spaces affect them.

2.4.1 Safety

In today's world, the safety of urban public parks (UPP) is an issue for many communities and the political forces of major cities, Thefts, sexual crimes, violence, vandalism, alcohol, and drug trafficking are the most common UPP-related crimes (Zavadskas, Bausys, and Mazonaviciute 2019) These factors also include various factors that are directly related to public health. In this discussion of security, factors contributing to safety can be variable. From vegetation design to park furniture and lighting, these are all factors that encourage some users to come to the park at certain times or not use some areas at all (Türkseven Doğrusoy and Zengel 2017). In a study conducted in Izmir, Turkey, the level of safety of the two parks studied was investigated considering several factors. The following tables shows an example of the perceived safety factors of crime, environmental satisfaction and visual access and navigation. (Table 1)

Table 1.Factor analysis of perceived safety (Türkseven Doğrusoy and Zengel 2017)

Factors	Items	Factor Loading	E	%
(Factor I) Perceived safety from crime	I am annoyed by the fact that unsafe people are wondering around*	0,767	3,009	23,15
	It is possible to experience sexual harrasment in this park**	0,735		
	Some disturbing circumstances can happen in this park**	0,689		
	Robbery and theft is unusual in this park**	0,644		
	I can visit this park during the night without any hesitation**	0,516		
	I feel safer when the park is crowded**	0,455		
(Factor II) Environmental satisfaction	I recommend this park to the others**	0,839	2,22	17,08
	I enjoy being here**	0,815		
	I feel safe in this park**	0,583		
(Factor III) Visual access and wayfinding	I am nervous about the fact that trees obstruct my view in some places of the park**	0,747	2,1	16,15
	It is not easy to describe a meeting point to a person who is not familiar with this park**	0,663		
	I can find my way easily in this park**	0,62		
	Some hiding places disturb me in this park**	0,603		
*p<0.05; **p<0.01				56,38

2.4.2 Wellbeing

With an overview of the city and urbanization, it is shown what consequences await the urban people. They consume resources and energy, generate pollution and waste, affect the climate, and simultaneously express prosperity, poverty, and vulnerability through complex methods (Santamouris et al. 2015; Kolokotsa et al. 2020) Green spaces such as parks, urban forests, etc are associated with psychological and physiological health, including reducing stress and depression. For example, people living in green urban areas have higher positive indicators for mental health than people living in low-green environments (White et al. 2013) All of these indicators refer to the health of citizens (Larson, Jennings, and Cloutier 2016)

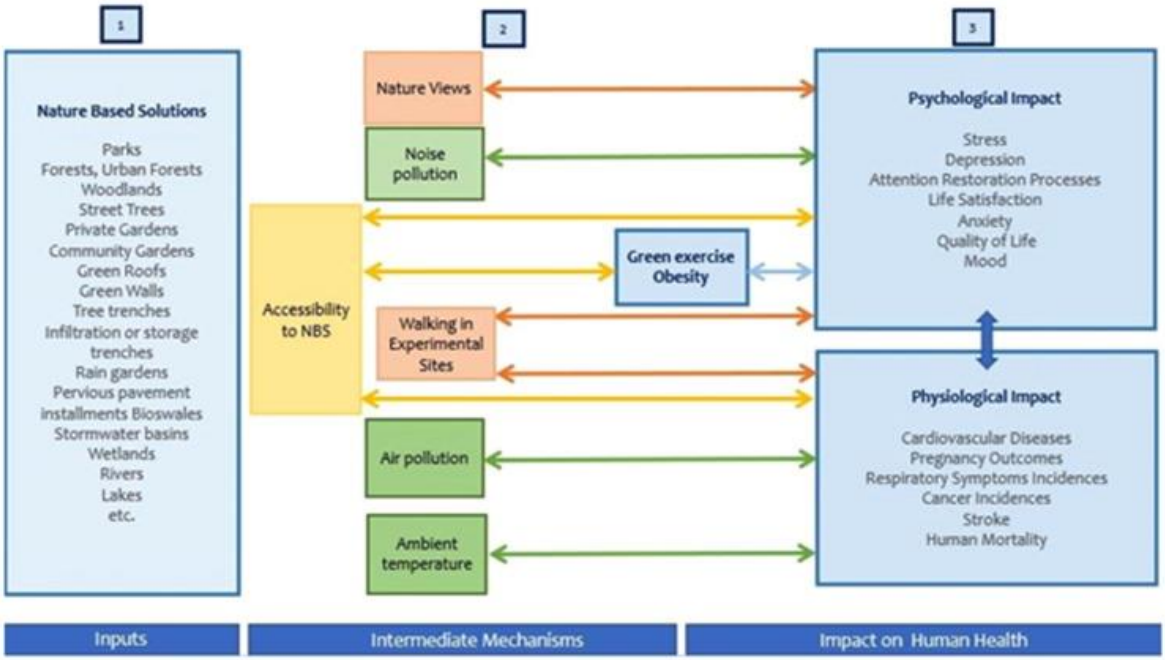


Figure 1. Principal pathways through which NBS may contribute to health and wellneing (Kolokotsa et al. 2020)

Figure 1 shows a framework to collect case studies related to different types and approaches related to human health. The nature-based solutions are divided into two categories, psychological and physiological, although these two categories are inseparable. An example of a strong connection and even interdependence between physiologically and psychologically aspects of nature base solution is physical activity and green sports, which affect citizens. (Larson, Jennings, and Cloutier 2016)

2.4.3 Satisfaction

If people pay attention to parks in general, they can see that parks play a vital role in creating pleasurable experiences. For example, according to research (Aziz et al. 2012), in big cities, parks can cover perceptions and emotions to satisfy the citizens and tourists. This is because the impact of the parks on the environment, atmosphere, and facilities are factors that can affect the quality of satisfaction. For example, if you look at this as a business. People can be seen as consumers of the product, how the high quality of the product makes them advertise and buy more. This not only improves the quality of that product but is also a great reason to buy more. So these spaces (parks) with the appropriate design and facilities offer people a quality that will be a significant reason to visit more (Aziz et al. 2012). For a better understanding, the main frameworks for the satisfaction factor can be seen in the figure below.

Figure 2. Frameworks of the Satisfaction Factor (Aziz et al. 2012)

2.4.4 Vitality

Industrialized cities in the developed world have been trying to integrate sustainable ecological, social, and economic dimensions in all fields of urban development. Among these dimensions, the development of green space has played an important role (Kabisch, Qureshi, and Haase 2015). Despite rapid urbanization and the increasing urban population, the demand for contact with nature and high-quality life for urban residents is also increasing (Zhu et al. 2020). Many kinds of research show how connected human health and well-being are to urban parks because they provide services that allow dwellers to undertake activities that

benefit their quality of life. So vitality is closely related to the human activity intensity in urban public spaces.

Jacobs (1961) claimed that people's activities and the diversity of their lives had bred urban vitality(Jacobs 1961) Figure 3 illustrates the spatial relationship between areas and the services and benefits provided. It shows how services connected areas such as the surrounding area of the urban park to the central park's site.

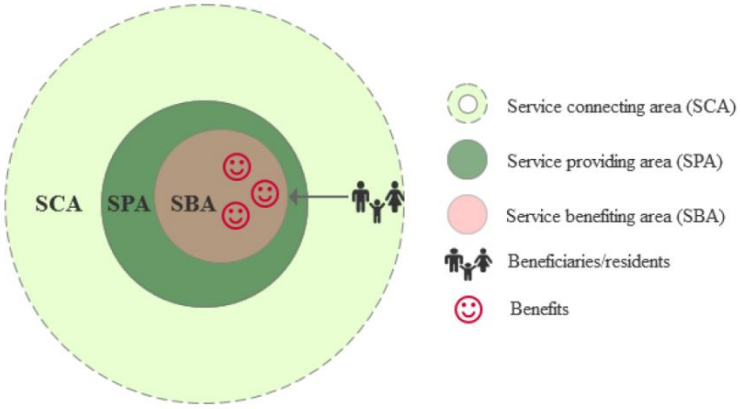


Figure 3. The spatial relationship between parks and surroundings (Zhu et al. 2020)

2.4.5 Comfort

The state of recreational facilities and their accessibility for citizens is an integral part of life quality. In large cities, park zones play an essential role in ensuring the comfort obtained from the environment and they are vital for contributing to and maintaining public health. The efficiency of parks performing their functions depends on the structure and condition of the park environment(Shabanova, Orlov, and Karpova 2020). Many aspects contribute to the level of comfort in urban parks, such as water bodies, recreational landscape, activity zone, and accessibilities, because these elements together create an accessible space for physical and social activities, as well as creating a pleasant view. It is worthy to note that cities need to meet the population's needs through the provision of green spaces, such as urban parks as this will increase the level of comfort experienced and thus the residents' sense of satisfaction.

2.5 **Basic Introduction of Urban Parks in Our Study Location**

As mentioned, the influential factors affecting green spaces have been studied in a variety of research, the aim here is to introduce the policy and management of parks and green space in Tehran, according to its history, current performance, and the effects on the urban area and community.

2.5.1 Park Development

The ancient city of Tehran has consisted of a lot of small, dispersed villages with large areas of gardens, forests, and meadows separating them. Subsequently, before the Ghaajar dynasty (almost 200 years ago), about two-thirds of the inner city was covered by urban gardens and farms. Accordingly, a lot of ancient tourists have described Tehran as a "garden city." (Faryadi and Taheri 2009) Since 1970, a significant sprawling metropolis growth has been fast, with little comprehensive planning of green spaces as an organized system. However, using parks and green space is a considerable part of the Iranian culture, with a grand tradition of gardens dating back centuries to different Persian styles and heritage. Within 22 urban districts of the city, there is a variety in amount and quality of the parks (Bahriny and Bell 2020). The figure 4 below illustrates the density of green spaces in Tehran in all 22 regions.

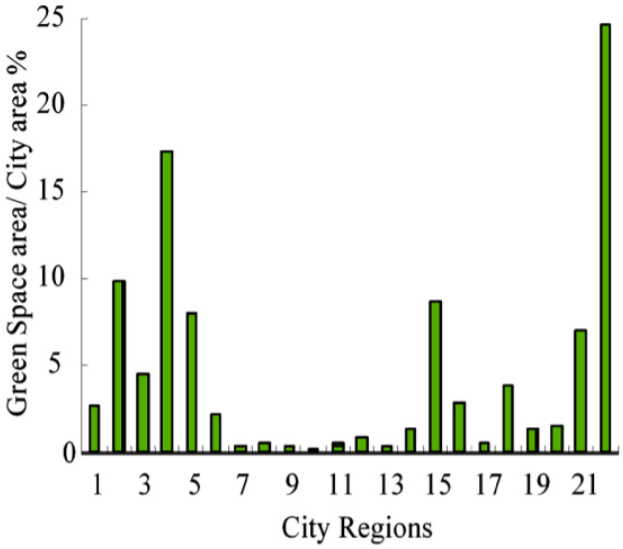


Figure 4 . The Density of Green Spaces in 22 Region (Faryadi and Taheri 2009)

2.5.2 Public Green Space Policy

Owing to the unbalanced development of Tehran and its uncontrolled population growth (Bahriny and Bell 2020), the existing green spaces were unable to satisfy citizen's needs. Thus, Tehran needed more parks to meet a range of objectives. Due to this fast-growing population and associated sprawl in Tehran, problems appeared, such as limited public areas that can meet the population's needs. To deal with this problem, Tehran Parks and Green Spaces Organization (TPGSO) has a policy of purchasing land and changing its use to establish new public green spaces, which has led to the creation of 154 parks over 30 years.
While the pragmatic policy goals of TPGSO are commendable, the lack of available resources is a significant issue, and there is a persistent inequality in many areas for park distribution. Therefore, it can be said that before creating more parks, as in the existing policy, assessment of the available resources and how people use these spaces will be a good guide for organisational planning in the future.

2.5.3 Site Assessment Sample

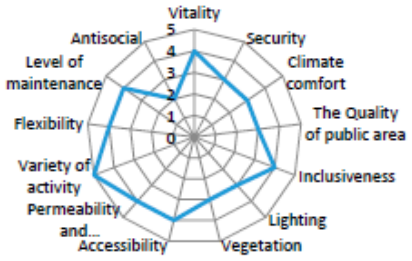
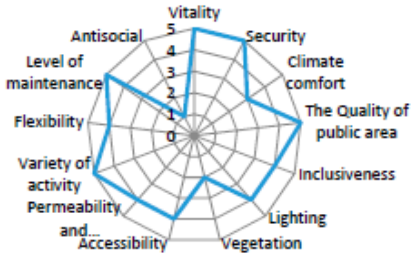
Bahrainy (2020) studied 16 main parks in Tehran and evaluated them for the main factors that contributed to meeting the needs of society.
Bahriny evaluated parks based on factors such as:

- Accessibility
- level of management
- Range of activities
- Evidence of anti-social behaviour
- Movement
- Quality
- Climate comfort
- Vegetation
- Vitality
- Safety
- Flexibility

- Lightening

The site assessment sample in the Table 2 below, shows 2 samples out of 16 works from her assessment.

Table 2. Site assessment sample (Bahriny and Bell 2020)

Park	Results of the site assessment	Main findings
Laleh		This park is in one of the oldest districts of the city and close to the most important student centres in Iran. It scores well for the variety of activities and lacks any antisocial problems; otherwise it is scores in the middle of the range and there are many aspects which could be improved.
Abo Atash		This park high scored highly in many areas, especially in the quality of the public areas, the level of maintenance, variety of activity and vitality, with correspondingly low levels of anti-social activity. The weaknesses were in the amount and quality of vegetation and the climate comfort – suggesting that there is insufficient shade which could limit the usability of parts of the park at certain times of day. Other aspects were also satisfactory but could be improved.

This research is based on the daily use or activities of the residents. It can show an overview of the patterns of park use in a sample park. In different areas, the location, size, and conditions affect the satisfaction and dissatisfaction of residents. The purpose of this research was to:

Examine why some parks are used less by some groups, to find out to what extent do existing parks meet the needs of the people, and What activities do people do in the green areas? According to these questions, Bahriny examined the necessary factors in each park (Table 2) to show the results that factors such as gender differences, cultural differences, park facilities, lighting, access, and religious aspects influence the safety and tranquillity of visitors.

2.6 **Impact of COVID-19 Pandemic on Large Societies**

Coronavirus Disease 2019 (COVID-19) has disrupted virtually every aspect of daily living, engendering forced isolation and social distance, economic hardship, fears of contracting a potentially lethal illness, and feelings of helplessness and hopelessness (Polizzi, Lynn, and Perry 2020)Deep emotional traumas in societies overwhelmed by large-scale human disasters, like, global pandemic diseases, natural disasters, human-made tragedies, war conflicts, social crises, etc., can also cause massive stress-related disorders (Ćosić K et al. 2020). People across the world, directly or indirectly, face the serious effects of this condition. Many nations have declared unprecedented lockdowns and emergencies. Many governments have shut down schools, colleges, universities, the market for pubs, the malls, the shopping centres, etc. In developed and emerging societies, an atmosphere of fear, anxiety, and stress has been established (Amutha 2020)Covid 19, therefore, has greatly influenced essential aspects of society, and a discussion on the effects of this disease including social restrictions, activities, etc., follows below.

2.6.1 Social Restrictions

The COVID-19 pandemic resulted in significant social and economic impacts throughout the world. In addition to the health consequences, the effects on travel behaviour have also been sudden and wide-ranging (Parr et al. 2020). The effects of Covid 19 have been enormous. As mentioned, it affected many issues, the largest of which was at the community level and restrictions. These limitations are so extensive that this study may not be able to explain all these aspects. But in general, we can refer to such things as inner-city and extra-urban travel, social gatherings, social activities, and so on. Let us look at the corona in different phases. We can come to the approximate conclusion that in the first wave, people's fear created social restrictions, and this epidemic caused countries to impose permanent restrictions with new laws. Here we can say that these restrictions have had consequences.

Unprecedented global travel restrictions and stay-at-home orders are causing the most severe disruption of the global economy since World War II. With international travel bans affecting over 90% of the world population and widespread restrictions on public gatherings and community mobility, tourism largely ceased in the first wave (Gössling, Scott, and Hall 2020)(Figure 4)

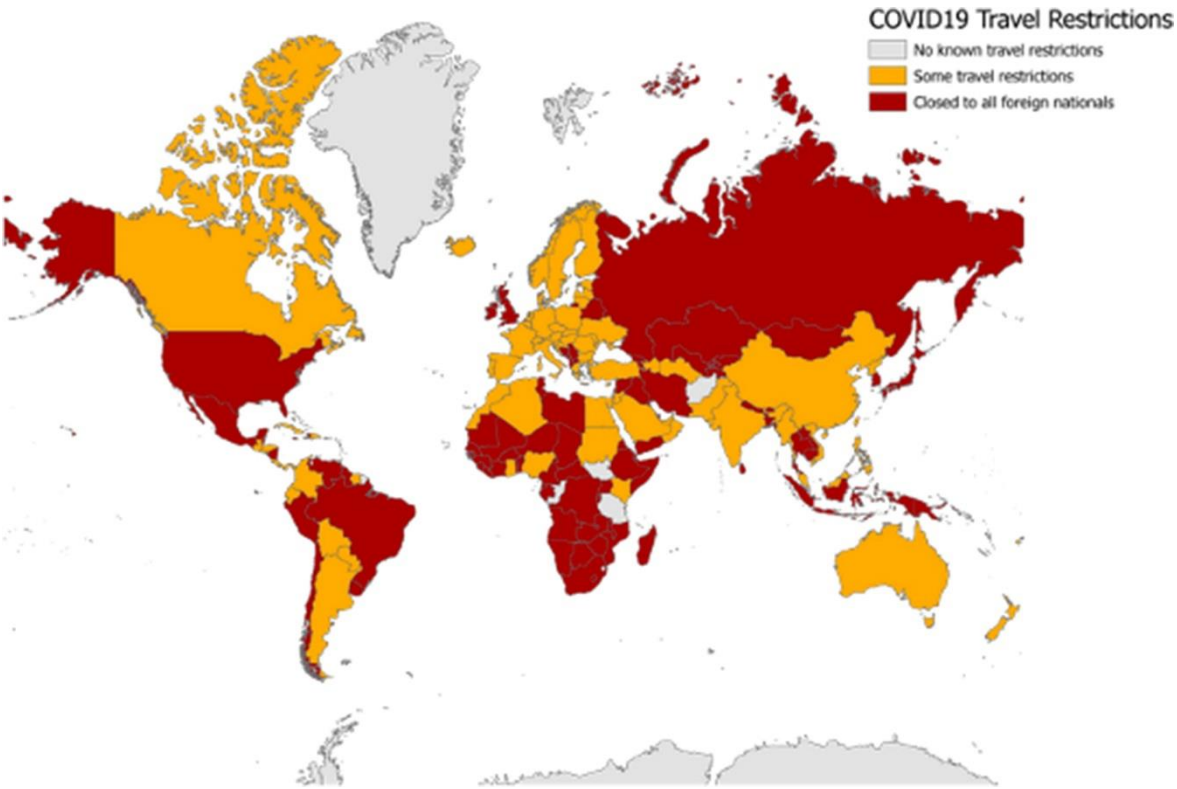


Figure 4. COVID-19 related global travel restrictions (Gössling, Scott, and Hall 2020)

2.6.2 Activities

Restrictions during the time of the Coronavirus pandemic affected many issues. One of the most important of these is the impact on physical activity. This effect is extensive and is not limited to age and gender. It is well known that widespread physical inactivity has led to increases in the global mortality rate. However, many different studies show varying impact of Covid-19 on people's activities by restrictions in societies. According to studies conducted in Greece:

The study conducted on 8495 people, shows that overall percentage of physical activity has decreased around 16.3% in this country (Bourdas and Zacharakis 2020).Another study in Italy shows the result that before the COVID-19 disease, 23.06% of participants are slightly

active (<600 MET–minutes/week), 35.18% are moderately active (≥600 MET–minutes/week), and 41.76% are highly active (≥3000 MET–minutes/week). During COVID-19 pandemic, the percentage of slightly active individuals increased to 39.62%, whereas 29.75% and 30.63% were moderately active with high activity (Maugeri et al. 2020).(Figure 5)

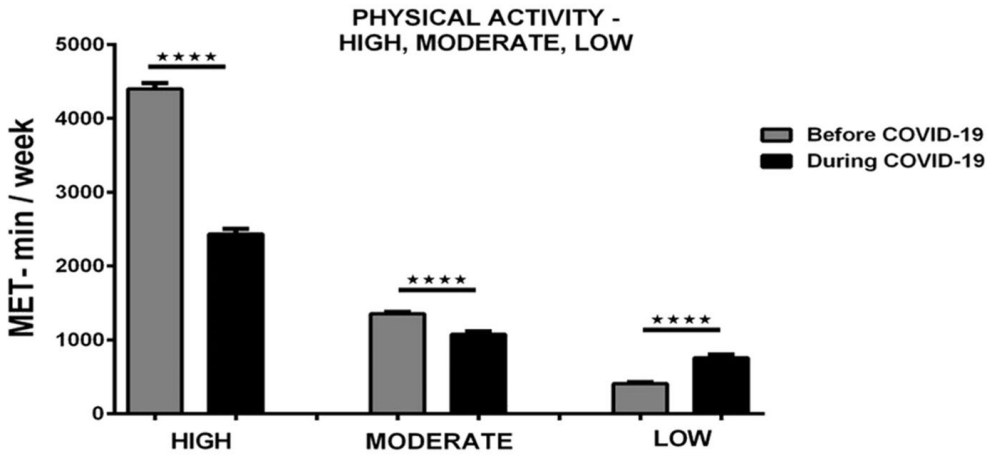


Figure 5. Comparison of physical activity before and during COVID-19 pandemic(Maugeri et al. 2020)

2.6.3 Health and Wellbeing

The COVID-19 pandemic has resulted in an increased level of anxiety and fear in communities in terms of disease management and infection spread (Maugeri et al. 2020). It is the biggest health crisis for generations, and has affected more than 200 countries around the world (Cowie and Myers 2021). Widespread use of social media, rumours, myths and inaccurate information about the virus have spread rapidly, leading to intensified irritability, fearfulness, insomnia, oppositional behaviours and somatic complaints (Feroz et al. 2020). Covid-19, in the first place, caused all fears and worries from restrictions that have led to impact on daily life and mental well-being. The COVID-19 had the biggest health crisis for generations, has affected more than 200 countries around the world. The COVID-19 pandemic, the biggest health crisis for generations, has affected more than 200 countries around the world There are essential factors to consider here that are related to psychological well-being. Covid-19 pandemic induced stress that resulted: anxiety, health anxiety,

depression, etc. The study in America shows, The Impact of Covid-19 Associated Stress on Anxiety, Depression, and Functional Impairment. (Figure 6)

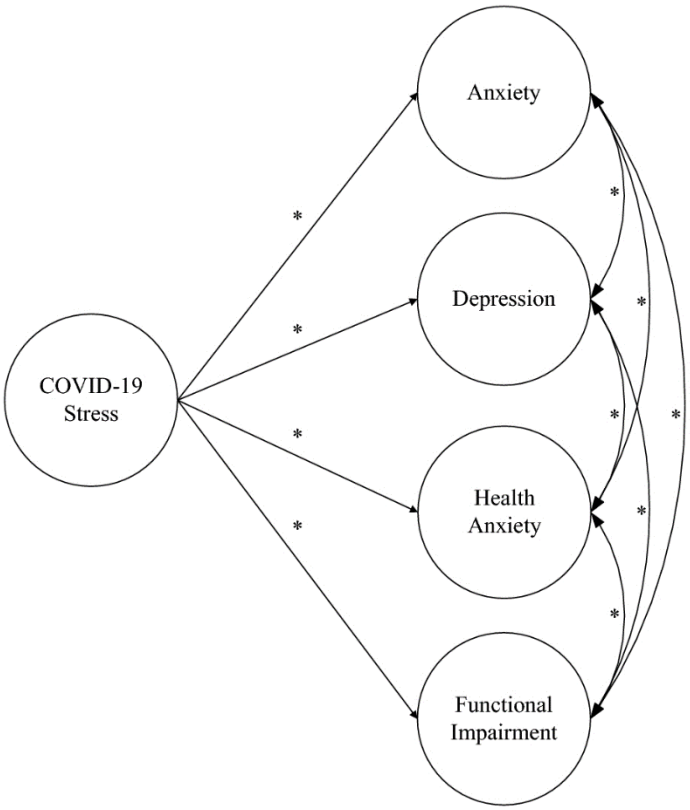


Figure 6. The Impact of Covid-19 Associated Stress on Anxiety, Depression, and Functional Impairment (Gallagher et al. 2020)

Covid-19 anxiety affects not only adults but also children and adolescents. More than 2.2 billion children in the world constitute approximately 28% of the world's population. Those aged between 10 to 19 years make up 16 % of the world's population (Singh and Singh 2020). When the lockdown occurred due to this disease, many children stayed at home and avoided social and physical activities. This problem among the young generation causes danger because it can increase depression and aversion in the child (Singh and Singh 2020). Mental health issues are a significant obstacle to academic success. Mental illness can affect students 'motivation, focus, and social interactions - critical factors in students' success in higher education. The 2019 Annual Report of the University Mental Health Centre reported that anxiety is still the most common problem (62.7% of 82,685 respondents) among students who have completed an assessment of mental health. Anxiety persists as the most common diagnosis of students seeking services at university counselling centres (Son et al. 2020).

Therefore, by looking at the essential effects of Covid-19 on their educational and psychological process, we can see how new problems have caused them to suffer during the epidemic. Studies in the United States show significantly altered elements in students that result in increased stress levels. (Figure 7)

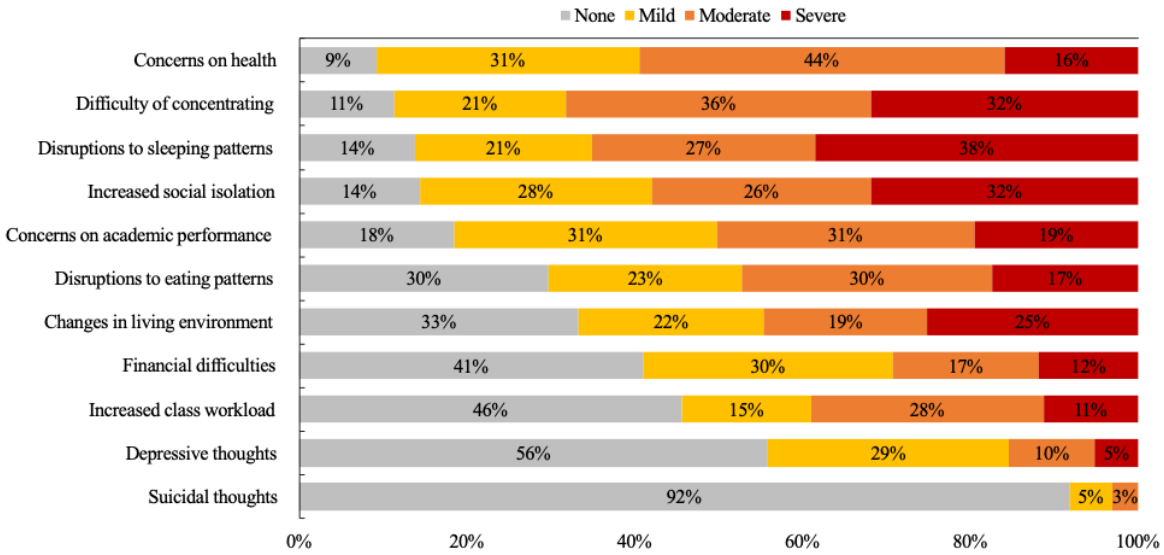


Figure 7. Student's ratings on mental health aspects in an order of negative impacts (Son et al. 2020)

At the end of this discussion, we can point to the older strata of societies; the most significant effect that Covid-19 can have on them is to prevent them taking part in their physical activity and socialization. Many studies have shown that the effects of this epidemic in older adults are loneliness and isolation (Wu 2020) that increases the prevalence of acute illness in the elderly, both physically and mentally.

2.7 **Impact of COVID-19 Pandemic on Green Spaces and Parks**

The COVID-19 pandemic led to lockdown and restrictions placed on public activities and gatherings; green spaces have become one of the few sources of resilience amidst this time of Covid-19, in part because of their positive effects on psychological, physical, and social cohesion and spiritual wellness. A global study (Geng et al. 2021) shows how regulations and

disease transmission rates in some countries affect the number of people visiting parks every day (Figure 8). The benefits of parks and green spaces at the time of Covid-19 have been considered, based on significant factors because the design of these spaces can meet society's needs. Parks have the potential to address some of the issues caused by high population density, and improve life satisfaction, environmental performance, personal freedom, life expectancy, etc. On the other hand, governments imposed restrictions on the epidemic, such as restrictions on the home, cancellation of public events, restrictions on public gatherings, etc to control disease transmission.

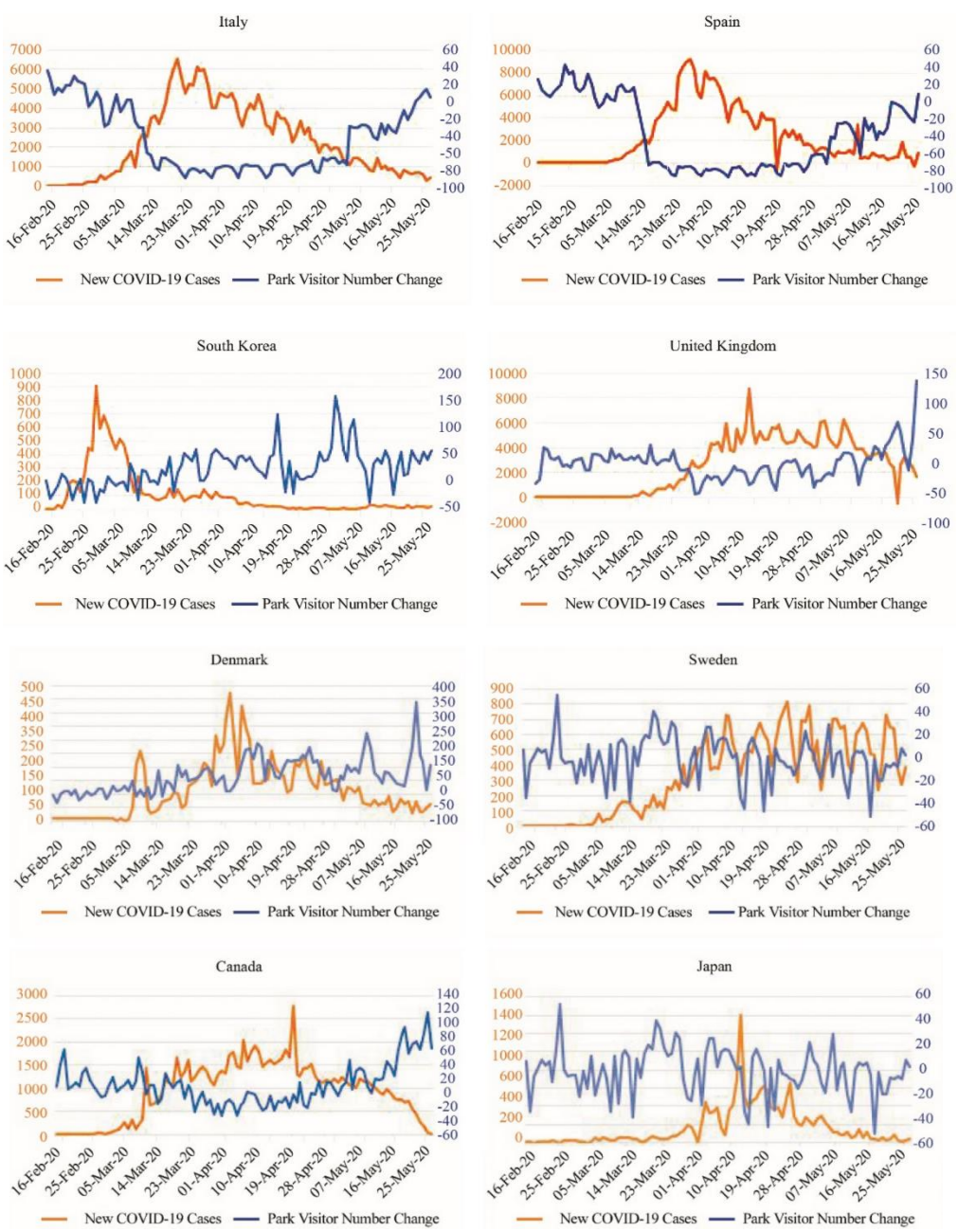


Figure 8. Comparison of Covid cases with park visitors (Geng et al. 2021)

As mentioned at the beginning of this section, in the Covid-19 situation, many social and governmental factors influenced the number of visitors in societies. Because Covid-19 created many fears and limitations, in many countries, people relied on areas close to their place of residence to maintain their mental and physical health. Green spaces therefore provided a relatively safe place for social and physical activities, although the amount and structure of available green spaces for public use are significantly different from country to country. Here it should be noted that given the stated benefits of green space, it is essential to assess the available evidence of the impact of green space on the rate of disease transmission. Evidence is needed to ensure that the green spaces do not in themselves contribute to a future epidemic as people potentially come into proximity to each other. The study in England shows that green space and patchiness could influence park use and therefore affect COVID-19 transmission. The upper two rows describe the primary predictions in the figure 9, while the bottom row explains alternate predictions. All variables (e.g., population density) except green space and patchiness, respectively, are constant in these predictions (T. F. Johnson et al. 2020)

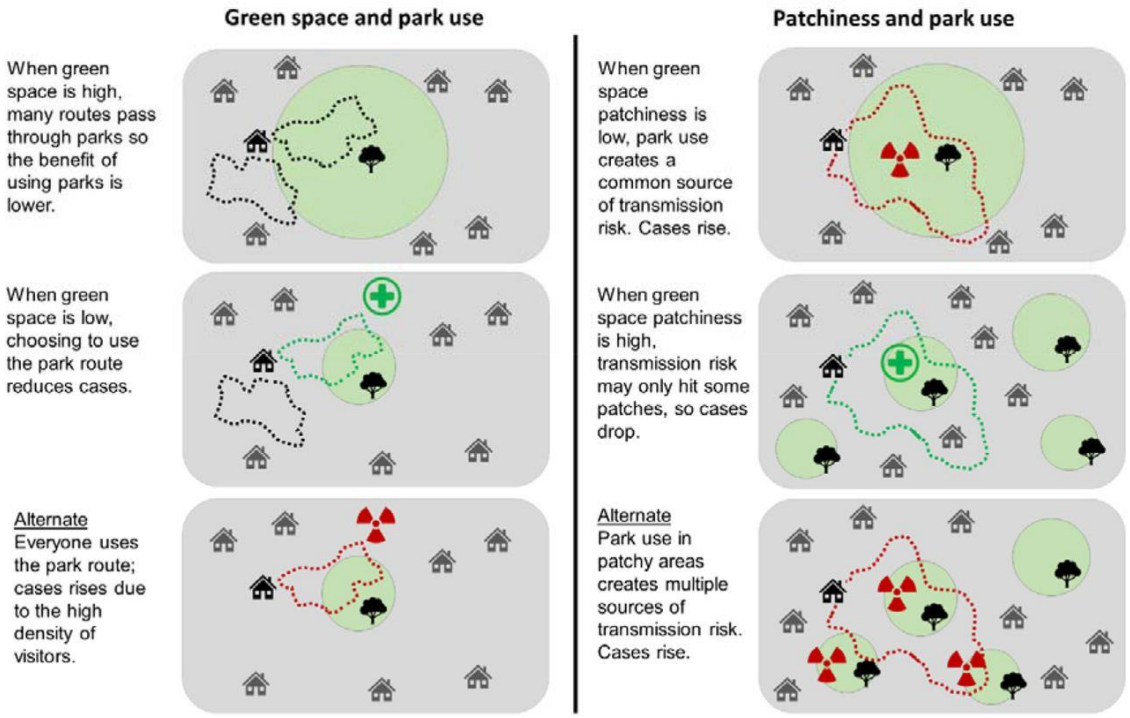


Figure 9. Green space and patchiness interaction with park use to influence Corona transmission (T. F. Johnson et al. 2020)

According to various research (T. F. Johnson et al. 2020), the condition of parks in terms of facilities to meet the needs of residents and their number is significant in reducing disease transmission. This is directly related to the community's health and the residents' activities in society because they can carry out their activities without fear of contracting the virus.

2.7.1 Tactical Urbanism as a possible solution

- **What is Tactical Urbanism**

Whether in large or small societies, cities worldwide use flexible and short-term projects to advance long-term goals related to public space, which provides a safe place to improve activities and public events. Tactical Urbanism is all about action to approach neighbourhood building using short-term, low-cost, and scalable interventions to catalyse long-term change. It can be a solution for cities and frustrated residents. Over the past decade, Tactical Urbanism has become an international movement, bringing about a profound shift in how communities think about project development and delivery.

- **Tactical Urbanism as a solution**

COVID-19 has an impact on the shape and use of public spaces today and will presumably leave a trace on how cities approach urban planning, design, and management in the future (Sharifi and Khavarian-Garmsir 2020). Local city governments have shown their intention to meet the new needs of citizens and taken the lead in stopping the spread of COVID-19 by adapting the use of public space. In this sense, tactical urbanism is proving to be a powerful tool to find quick and low-cost solutions to urban problems (“Tactical Urbanism as a Response during the Pandemic | Metropolis” n.d.). Cities around the world looked into both temporary and more permanent adjustments that would provide new walkable spaces during the pandemic to meet the physical distancing requirements. This included tactical urbanism actions such as extensions of sidewalks, provisional bike lanes, street closures in favour of “new” and accessible public space, parklets, temporary gardens and others (Herman and

Drozda 2021). Governments and urban planners have turned to changeable spaces to allow social distancing and create a safe space for residents in many countries. The question is how to reduce the spread of this disease by creating temporary spaces? As of April 1st, 2020, the Polish government prohibited the use of parks, beaches, boulevards, promenades, forests, national parks, playgrounds, botanical, and zoological gardens due to these areas being a shared space for large public gatherings. The government lifted most restrictions after a few weeks. Later Warsaw City council announced that several streets would be redesigned with parking spaces to create safe and open spaces for activities. In addition, sustainability researchers in New Zealand proposed the "Green Covid-19 recovery program" that included safe walking and cycling trails. The recovery program also promised new pocket parks in the dense urban fabric (Herman and Drozda 2021). Due to the high impact of Covid-19 in different communities, including vast cities, urban planners controlled many problems with small ideas. These small ideas helped to address such problems as the fear of travelling by public transport, while supporting people to take physical activity. In many countries, such as the United Kingdom, Mexico, Poland, Australia, etc. governments have been able to help create city-wide walking and cycling trails with traffic control by narrowing many of the main streets. Meanwhile, in many large cities, they attracted people and created space for children to play and controlled social distancing by creating pocket parks in main streets**.**

Figure 10. Proposed added space for walking and riding bikes in Brunswick Street, Melbourne ("We Can't Let Coronavirus Kill Our Cities. Here's How We Can Save Urban Life" n.d.)

Figure 11. Current situation of Brunswick Street, Melbourne ("We Can't Let Coronavirus Kill Our Cities. Here's How We Can Save Urban Life" n.d.)

Figure 12. Proposed added space for walking and riding bikes with planting and seating ("Tactical Urbanism: Reimagining Our Cities Post-Covid-19 | ArchDaily" n.d.)

Figure 14. Residence street in London provides third of its width for vehicles ("Tactical Urbanism: Reimagining Our Cities Post-Covid-19 | ArchDaily" n.d.)

2.8 **Summary**

In this chapter, we learned about the principles and values of public open spaces, especially parks, and their importance in everyday life. According to the research and study of all relevant documents and case studies in the last section, parks and public green spaces in small and large societies significantly impact the health and activity of residents. This research discusses parks in cities and their beneficial effects in specific and critical situations such as Covid-19. So with this knowledge, I can understand what I need to research in these urgent situations and look for possible solutions such as Tactical Urbanism. A solution that can be useful in designing open urban spaces and developing them with long-term goals.

3. CHAPTER THREE: METHODOLOGY

3.1 Introduction

Parks are resources that have a large impact on the community and can have a direct relationship to social health. It can be challenging to assess the quality of the park because the few aspects that characterize the park led to physical activity such as recreation facilities, physical activity facilities, children's public space, and etc (Bird et al. 2015). As mentioned before, the purpose of this research is to find the problems and capacities of the park's situation during Covid-19 pandemic. Therefore, the community and residents play a very important role in this study. Consequently, interviews are one of the main pillars in the structure of this research method that will connect research with other aspects of this study. Below I will explain each section for better clarification of this research method (Figure 14).

3.2 Research Process

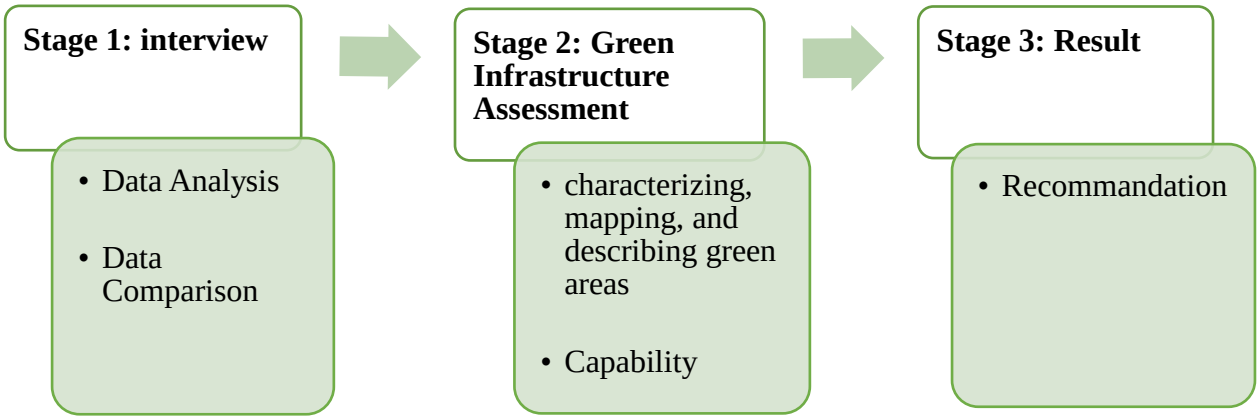


Figure 15. Research Process (By Author)

3.3 **Interview**

This thesis consists of an extensive survey conducted across the city of Tehran, Iran to gather information from a wide variety of parks, from the small local parks to the larger and consequently more important parks. Unfortunately, due to the Covid-19 and lack of travel, these interviews were conducted online, and all information was recorded in audio and written form for analysis. These extensive surveys were carried out across different social classes and different age groups of the society, and a total of **60 people** were interviewed as follows:

1. 30 retired teachers
2. 10 university students
3. 20 other locals

3.3.1 Data Analysis

Data analysis is the most important part of any investigation. Data analysis summarizes the data collected. This involves interpreting the collected data using analytical and logical reasoning to determine patterns, relationships, or trends. Data analysis is the process of regularly using statistical and/or logical methods to describe and visualize, summarize, and recompose and evaluate data. Qualitative data analysis methods were the method used in this research, which has different subsets. Given that this research is based on interviews, the qualitative analysis method here is a "narrative analysis." In this method, content analysis from interviews was used to answer research questions by focusing on the stories and experiences shared by the interviewees.

3.3.2 Data Comparison

Simply put, comparative research is the comparison of two or more things to learn something about one or all the things being compared. This method often involves the use of a different discipline in a study. When it comes to methodology, some researchers agree that there is no

specific method for comparative research (Heidenheimer 1985). My research involves collecting qualitative data from different groups at different social levels. The comparative analysis between parks was used to obtain information to enable a scoring system for the parks to be developed.

3.4 **Green Infrastructure Assessment**

This assessment focuses on the current state of green spaces (parks) under Covid-19 conditions. This evaluation is the result of surveys conducted in this study to introduce the case studies.

3.4.1 Characterizing, mapping, and describing green areas

Development of green infrastructure has an essential role to play in improving parks and affects many aspects, such as air quality and recreational space leading to a better quality of life. So, in this section, the purpose is to evaluate these green spaces from the perspective of residents who are daily users of these spaces. All evaluations and explanations related to each of these spaces have been conducted from the people's perspective that has brought interesting results. The table below was used to evaluate each park. (Table 3)

Table 3. Determination of Parks Assessment (by Author)

Park Assessment							
Name of Parks	1	2	3	4	5	6	7
	Map	Location	Size	Portion of Green	Accessibility	Current Condition	People Perception during Covid-19

3.4.2 Capability

After the parks were evaluated and described they were then evaluated for appropriateness and inappropriateness of each space according to the factors (Safety, crowding, size and distance, etc) listed. According to the table provided, this grading is based on the quality of each area (Table 4). In this section, the goal is to evaluate the parks to develop recommendations for park improvements that meet the needs of inhabitants. Finally, scores for each park were compared with the essential factors from the survey to reveal the cases where parks do not meet the needs of people in terms of their quality.

Table 4. Determination of Value in the Assessment (By Author)

Rate of Grading			
Value of the Grades	1	2	3
	Poor	Medium	High

3.5 **Getting Results**

The results from the residents' perspective enabled each space to be evaluated based on the needs of the residents. The ratings for each park provided the evidence for the requirements needed by Tehran's citizens for the parks and to then develop a list of recommendations.

3.6 **Summary**

The study methodology is one of the important factors in the research process. The way data is collected, and processed is important to achieve good results, however, in any research, there are difficulties that can significantly affect the research method of that study. In this particular study significant issues were encountered due to Covid-19 restrictions, but in this situation, the choice of an appropriate research method, ensured results achieved and covered the study's objectives. In this thesis, the step-by-step methods were:

Comprehensive online interviews with city residents, collecting all the information obtained and evaluating, grading each case study, and comparing them, and finally presenting the recommendations.

4. CHAPTER FOUR: RESULTS

4.1 Introduction

Through this thesis, I have considered all the data and knowledge that we need to be able to achieve the best results. All the information that I will review has been obtained from interviews with citizens (Appendix 1).
This chapter indicates:

- Overview of each park
- Residents' opinion about each place
- The overall analysis of all parks in three phases (three Covid waves)
- Factors for evaluating and comparing places.

4.2 Overview of each park

Each of the parks are introduced in this section. Data were collected from the opinions expressed by the residents and then evaluated.

4.2.1 Behesht-e Madaran Park

The Tehran City Council approved the plan to establish Behesht-e Madaran Park as the first park for women in August 2003; this place gives women opportunities to have their activities without hijab freely. Construction of the park began in 2005, and it opened in May 2008. This park has an area of 20 hectares and includes various sporting and cultural facilities. For

example, it has a professional and semi-professional cycling track, multi-purpose sports halls for sports such as volleyball, basketball, and archery, as well as the existence of Hora Culture House for holding various training classes. In addition, there are several pergolas in the inner courtyard of the park which provides a good space to spend pleasant hours for women and ladies who come to visit the park. The facilities include a Mother health house, open amphitheatre hall, library, buffet, Health road, children's playground which are part of the other amenities of Behesht-e-Madaran park (جم n.d.). The park is located in District 3 of Tehran Municipality at the intersection of Haqqani Highway and Shahid Kaveh Street. According to reports, this park is public and family on some holidays.

Figure 16. Behesht-e Madaran Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

According to recorded interviews, Behesht-e Madaran Park has satisfactory vegetation that creates a feeling of calm and safety, as well as sufficient space for sports activities.

The park has six available access points from the main road and local streets.

The interviewees satisfaction with this park is in line with the existence of an adequate and suitable walking path and the necessary equipment that allows them to have delightful moments without stress.

Figure 17. Behesht-e Madaran Health Road, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

4.2.2 Nofel Loshato Park

The Tehran City Council approved the plan to establish Nofel Loshato Park in 1991. This park has an area of 25026 square meters. The park is located in District 4 of Tehran Municipality at Hengam Street and Delavari Street. This place, in terms of geographical location, is located near shops and the University of Science and Technology, Al-Ghadir Hospital, and the Fruit and Vegetable Market. The facilities include the mansion located in the middle of the park, a theatre, and a coffee shop for visitors to spend their leisure time.

Figure 18. Nofel Loshato Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

According to the residents' opinions, the amount of vegetation in this park is satisfactory and gives a complete sense of security to the visitors. The park has good access to public transportation and has ample parking due to its proximity to a department store. The paramount satisfaction of the residents about this park includes minimal pollution in the place, suitable recreational and sports space, children's playground, and water fountain in the centre of this park, which makes the area pleasing and relaxing for the passage of time.

Figure 19. Nofel Loshato Fountain, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

4.2.3 Enghelab Sport Complex

Enghelab Sports Complex, the former Imperial Club, was established in 1958, and after the victory of the Revolution, it was handed over to the Physical Education Organization. Due to its geographical location, this complex has a healthful climate in the north of Tehran. This complex has an area of about one million square meters, of which more than 50% is green space, and the rest is 10,000 square meters of cultural places and 60 hectares of indoor and outdoor sports space. Also, the Enghelab Family Sports Complex has complete facilities in golf, tennis, squash, volleyball, basketball, football, swimming, sauna, bodybuilding, martial arts, fishing, and karting. The beautiful scenery of the golf courses with large trees around the road appears in the green tunnel. The water features, streams on both sides of the road, and the establishment of a buffet in an environment overlooking the golf courses are some of the advantages of this road (“مجموعه فرهنگی ورزشی انقلاب” n.d.) (Enghelab Sport Complex translated from Persian)

Figure 20. Enghelab Sport Complex Map, Tehran, Iran (“Earth Versions – Google Earth” n.d.)

- **Residents' opinion**

According to the citizen's opinion, the amount of vegetation in this recreational and sports complex is very satisfactory and suitable for stress-free physical activities. This space has two accesses from the main streets with a considerable parking lot. Many people have put a lot of emphasis on suitable walking and recreational conditions in this place.

Figure 21. Enghelab Sport Complex Health Road, Tehran, Iran ("مجموعه فرهنگی ورزشی انقلاب" n.d.) (Enghelab Sport Complex translated from Persian)

4.2.4 Fadak Park

Tehran Fadak Park was established in District 8 of Tehran Municipality in 1966. This park has an area of 30,946 square meters. Fadak Park is one of the best-equipped local parks in Tehran. The playground of this park is furnished with entirely standard play equipment for children's leisure time. Other facilities of Fadak Park in Tehran include outdoor sports facilities, a centre for the intellectual development of children and adolescents. The park also has a swimming pool and a club with complete sports facilities("پارک فدک تهران |یکی از جاذبه‌های بی‌نظیر گردشگری در شرق |فانزی" n.d.) ("Tehran Fadak Park | One of the unique tourist attractions in the east | Funzi" n.d. translated from Persian)

Figure 22. Fadak Park Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

According to Citizen's opinion, the amount of vegetation in this park is satisfactory. The park has two accesses from the main streets. However, the park is in a busy area, suitable for hiking and sports activities. Advantages of the park are easy to access, well-equipped in terms of sports, proper walking path, and suitable vegetation in the designated space.


Figure 23. Fadak Park Walking Path, Tehran, Iran ("Google Earth" n.d.)

4.2.5 Jasmin Forest Park

Jasmin Park is the largest forest park in Tehran, which has an area of about 1400 hectares and, due to the location of this park in the northeast of Tehran, has a suitable and excellent climate. It is divided into two parts, north, and south which have different municipalities. So, according to this division, they have various facilities. In the south of Jasmin Park, facilities include a bathroom, a children's playground, a tennis table, handball, a pavilion, a bench, a possibility of rock climbing for children, and a lot of sports equipment. But in the northern part of the park, there are fewer facilities ("همه چیز درباره بوستان یاس فاطمی در سال 99 |تهران مبله" n.d.) ("Everything about Jasmin Park in 2020 | Furnished Tehran" n.d. translated from Persian)

Figure 24. Jasmin Park Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

According to the information collected, Jasmin Forest Park has less vegetation than other forest parks, which is somewhat unsatisfactory. The park has four easy accesses to the main ways. Since this park is divided into two parts with different facilities and lousy management, it reduced citizens' satisfaction. Problems facing the place include lack of signs, unsafe playgrounds for children, and inadequate walking paths.

Figure 25. Jasmin Park, Tehran, Iran (“همه چیز درباره بوستان یاس فاطمی در سال 99 |تهران مبله” n.d.) ("Everything about Jasmin Park in 2020 | Furnished Tehran" n.d. translated from Persian)

4.2.6 Laleh Park

Laleh Park is an old park established in 1966 in Tehran, located in District 6 of the capital municipality, and it has an area of 35 hectares. This park has different plant species such as silver cypress, sycamore, oak, ginkgo, mahogany, acacia, acacia, maple, berry, redwood, bamboo, cypress, palm, elm, poplar, barberry, red and white pearl, Ligustrum Is. The park sports facilities, including basketball and volleyball courts, are also located in the northern part. The park also has a puppet theatre centre, a library, a children and Adolescents Intellectual Development Centre, a mosque, a bench for leisure, toilets, a buffet, the permanent market in the western part of the park, sports equipment, children's playground, lawn, gallery, multi-purpose sports hall. One of the most beautiful attractions of Laleh Park is its facade and central square (“Laleh Park | Visit Iran” n.d.)

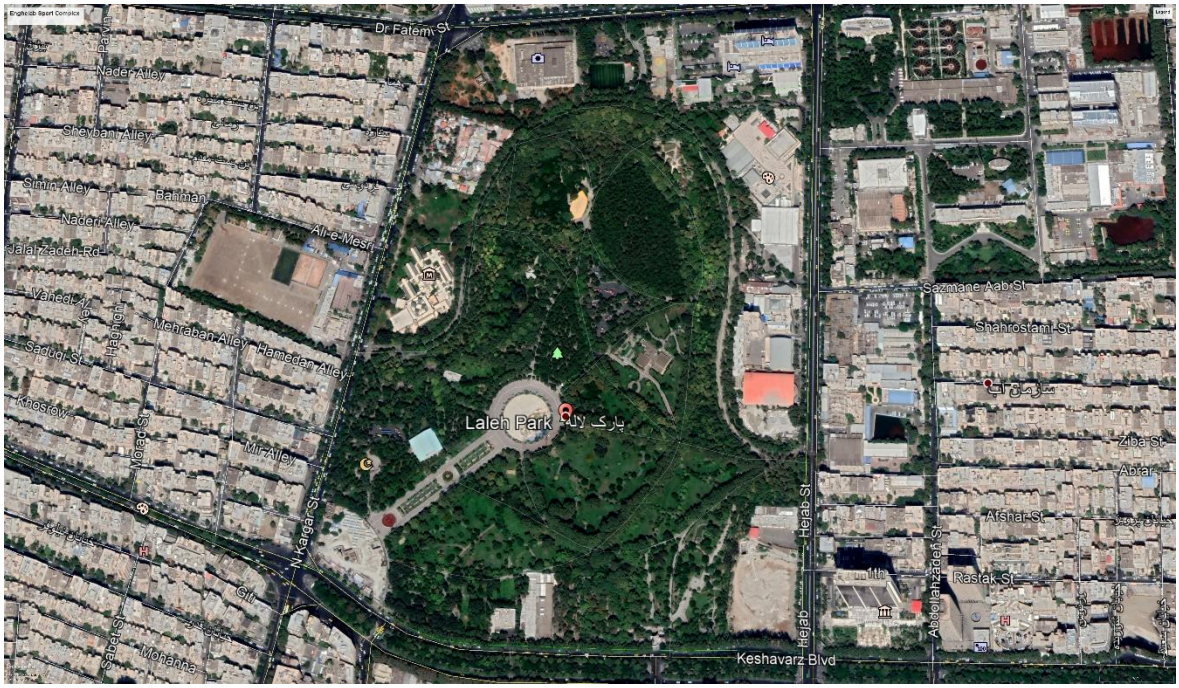


Figure 26. Laleh Park Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

This park with suitable and diverse vegetation provides a pleasant atmosphere for the residents. It has easy access by car and public transport. According to the residents' opinion, this park is located in the city centre and is very satisfying due to its large size and the necessary equipment for recreation and sports.

Figure 27. Laleh Park Fountain, Tehran, Iran ("Laleh Park | Visit Iran" n.d.)

4.2.7 Mostafa Park

Mostafa Mostafa Khomeini park is located in the Baharestan neighbourhood of Tehran and Daneshsara II Street. It has an area of 228 square meters. This park is one of the two parks in this neighbourhood; in terms of geographical location, it is near important centres such as the hospital, Bagh Negarestan, the Museum of the History of Honors, and Baharestan Passage (“بوستان مصطفی خمینی؛ پارک جوان تهرانپارس - نابرو” n.d.) ("Mostafa Park; Tehran-Pars Young Park - Nabro" n.d. translated from Persian)

Figure 28. Mostafa Park Map, Tehran, Iran (“Earth Versions – Google Earth” n.d.)

- **Residents’ opinion**

According to the information obtained in the interviews, this park has desirable vegetation, easy access, well-furnished that is aligned with the greenery, and conveys a sense of safety to the residents.

4.2.8 Parvaz Park

Parvaz Park was established in 2008, and it is located in District 2 of Tehran Municipality. Tehran Parvaz Park has an area of 131,303 square meters. In the construction of this park, Tehran Municipality has designed and implemented this park by using tasteful Iranian artists and architects. This park has an expansive view due to the difference in height with the surrounding areas. Park facilities include a sports venue, amusement park, restaurant, pavilion, fire station, and mosque (“پارک پرواز تهران؛ جاذبه‌ها، تصاویر و آدرس |مجله علی بابا” n.d.) ("Tehran Parvaz Park; Attractions, Images and Address | Alibaba Magazine" n.d. translated from Persia)

Figure 29. Parvaz Park Map, Tehran, Iran (“Earth Versions – Google Earth” n.d.)

- **Residents’ opinion**

In the interviews conducted, vegetation satisfaction and easy access are considered due to the difference in height and slopes designed in this place. It is also considered that the space is suitable for children.

Figure 30. Parvaz Park view, Tehran, Iran (“پارک پرواز تهران؛ جاذبه‌ها، تصاویر و آدرس |مجله علی بابا” n.d.) ("Tehran Parvaz Park; Attractions, Images and Address | Alibaba Magazine" n.d. translated from Persia)

4.2.9 Police Forest Park

Tehran Police Park, known to the ancients of this city as Bagh-e Anari that is one of the oldest parks. It opened in 2003, on the occasion of Police Week. This park has an area of about 51 hectares and is divided into two parts, north and south, by a boulevard called Esteghlal Boulevard. The northern part is 27 hectares, and the southern part is 24 hectares. The northern part provides good conditions for cycling and walking, and a traffic education park has been built for children. There are various facilities in this park, including a restaurant, a prayer house and a library, a pavilion, a pond, a swimming pool, a water feature, gym equipment, outdoor sports fields, a children's playground, a multi-dimensional cinema, a hall, and Amphitheatre (“معرفی پارک پلیس تهران” n.d.) ("Introduction of Tehran Police Park" n.d. translated from Persia)

Figure 31. Police Park Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

Studies have shown that this park is satisfactory in terms of vegetation tree species. This park has convenient accesses with ample parking and suitable physical activities due to the convenient walking path and the well-equipped sports section. Besides, citizens can enjoy different views due to the steep slopes.

Figure 32. Police Park View, Tehran, Iran ("معرفی پارک پلیس تهران" n.d.) ("Introduction of Tehran Police Park" n.d. translated from Persia)

4.2.10 Qeytarieh Park

Qeytariyeh Park, which was established in 1973, has an area of 122,206 square meters. This park used to be a private garden and was built about 160 years ago. Vegetation type: Acacia, Oak, Elm, Walnut, Daghdaghan, Maple, Mulberry, Cedar, Tehran Pine, Bidmajnoon, Plane, Poplar, Mashhad Pine, Macronulia, Cedar, Noel, Cerolauson, and shrubs such as hawthorn, and narcissus at the southern entrance of Bustan are its characteristics. Park facilities: Cultural Centre of Nations, gallery, library, prayer hall, pond, playground, water storage tank, and toilet ("پارک قیطریه تهران؛ هرآنچه از یک پارک خوب انتظار دارید | مجله علی بابا!" n.d.) ("Tehran Qeytariyeh Park; everything you expect from a good park! | Alibaba Magazine" n.d. translated from Persia)

Figure 33. Qeytarieh Park Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

According to the residents' opinion, this park with diverse vegetation creates a safe and satisfying atmosphere. Access to the parking lot is comfortable, but the main problem with this space is the lack of parking space, chaotic conditions that cause chaos, and overcrowding in the surrounding streets.

This park is a local park for residents, but it is one of the most popular parks in the city, especially in the north of Tehran. This space has a suitable walking path and a sports space. The interviewees have emphasized that this park is a family and safe place.

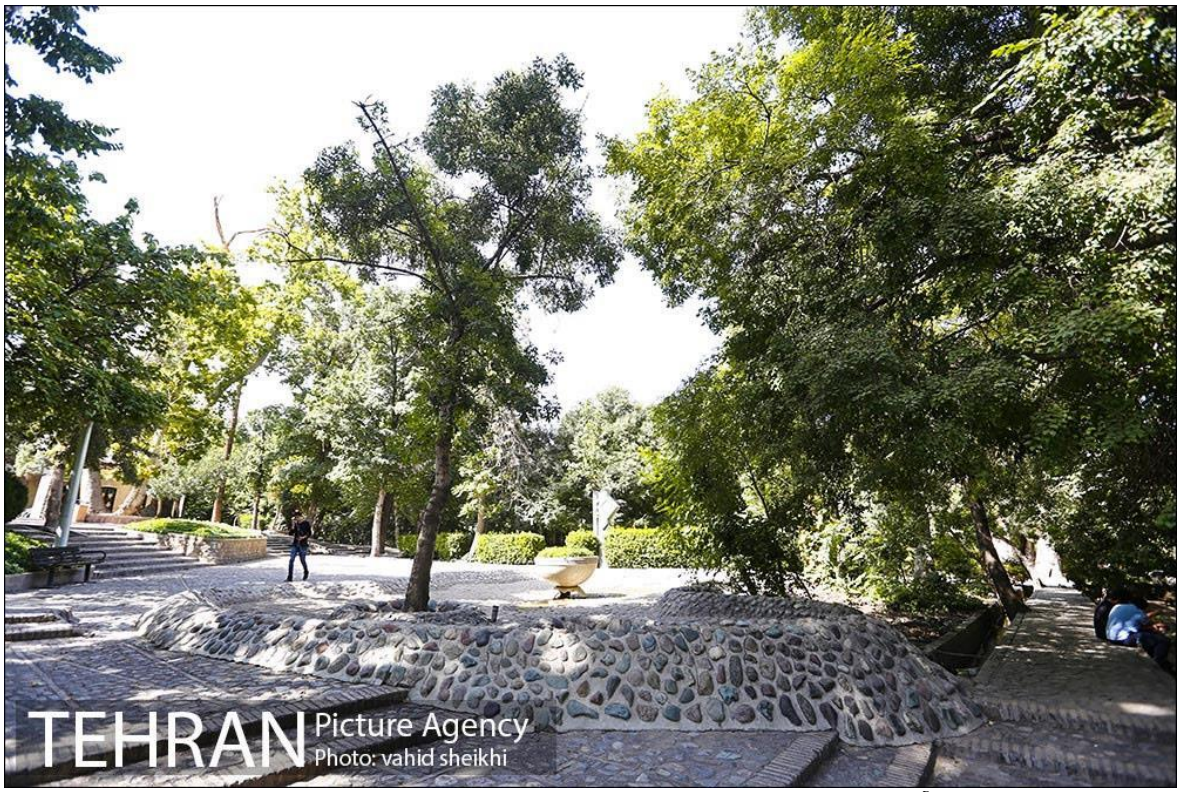


Figure 34. Qeytarieh Park View, Tehran, Iran (“ پارک قیطریه تهران؛ هرآنچه از یک پارک خوب انتظار دارید | مجله علی بابا!” n.d.) ("Tehran Qeytariyeh Park; everything you expect from a good park! | Alibaba Magazine" n.d. translated from Persia)

4.2.11 Sadaf Park

Sadaf Park was established in 1994 with an area of 29467 square meters. Vegetation type: Plane, acacia, dahlia, mulberry, maple, azalea, clove, pine, cypress, elm, spruce, purple, ice flower, and persimmon. Park facilities: Sadaf Culture House, prayer hall, deputy of municipal services, children's playground, green space office of the municipality of region 4, a statue of the symbol of the Iranian man, water fountain, and bathroom (“ پارک صدف |پارک و بوستان |کی کجاس” n.d.) ("Sadaf Park | Park | Where" n.d. translated from Persian)

Figure 35. Sadaf Park Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

According to some interviews, this park has well-managed vegetation that makes a place satisfactory for residents. This park has its access and proper space for spending time with family, but it cannot answer the population of that area in size as a local park.

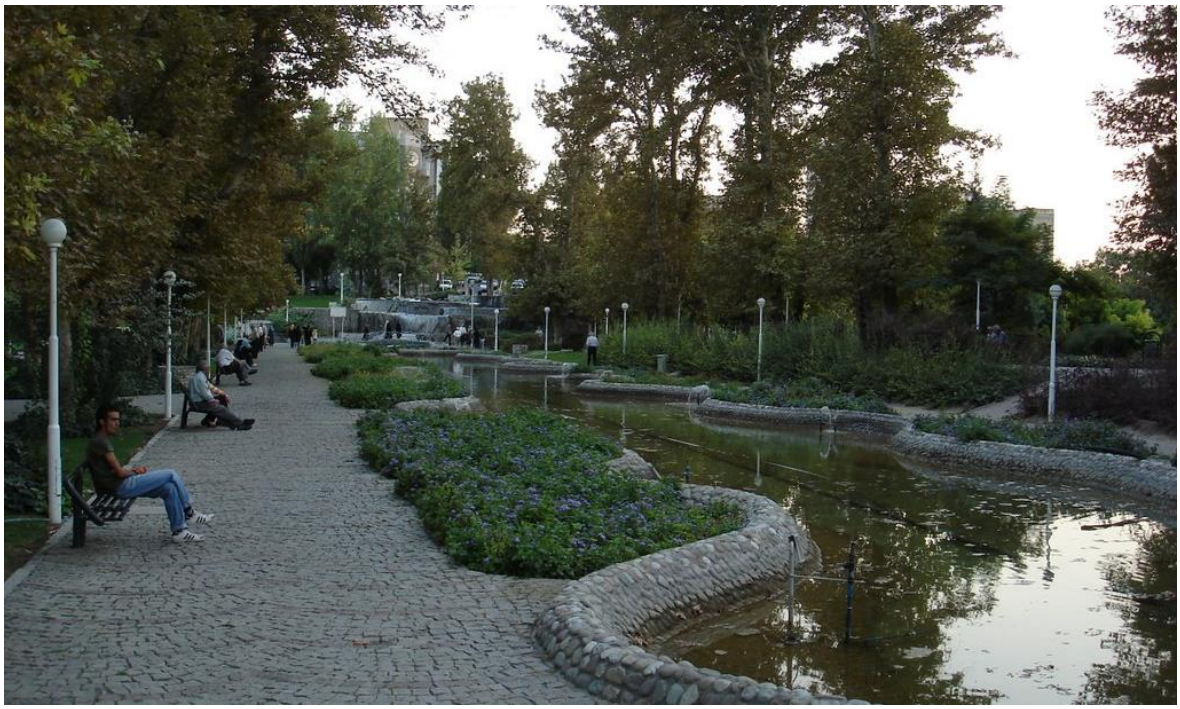


Figure 36. Sadaf park, view, Tehran, Iran ("پارک صدف | پارک و بوستان | کی کجاس" n.d.)
("Sadaf Park | Park | Where" n.d. translated from Persian)

4.2.12 Sattarkhan Park

Tehran Tehran SattarKhan Park was established in 1970 in District 2 of Tehran, which has an area of 7,000 square meters. This park has a beautiful fountain in its center and has various facilities that relatively meet the people's welfare needs. The vegetation of this park is trees such as cedar pine, spruce, cypress, sycamore, acacia, olive, and evergreen shrubs such as milk thistle and peacock. Parts of Sattarkhan Park in Tehran are dedicated to a standard children's playground equipped with play equipment and several chess tables and a ping pong table, and public sports equipment is installed in the park. Other amenities of Sattarkhan Park include several benches in different parts of the park and toilets (“ پارک ستارخان |معرفی یکی از برترین بوستان‌های غرب پایتخت |فانزی” n.d.) (“Sattar Khan Park | Introducing one of the best parks in the west of the capital | Funzi)

Figure 38. Sattarkhan Park Map, Tehran, Iran (“Earth Versions – Google Earth” n.d.)

- **Residents’ opinion**

According to the information collected from the residents, this park has obtained the lowest level of satisfaction from the locals in terms of vegetation, parking, and crowded space. But along with this negative point, it has a suitable space for children to play in.

Figure 41. Sattarkhan Park View, Tehran, Iran (“ پارک ستارخان |معرفی یکی از برترین بوستان‌های غرب پایتخت |فانزی n.d.) (“Sattar Khan Park | Introducing one of the best parks in the west of the capital | Funzi)

4.2.13 Shafagh Park

Shafaq Park in Tehran was established in 1963 in the Yousefabad area, and its construction lasted three years. Shafaq Park has an area of 16867 square meters. It is located in District 6 Tehran Municipality. The vegetation of this park consists of trees such as sycamore, elm, pine, acacia, willow, maple, yellow jasmine, and olive. It should also be noted that the first cultural centre of Tehran, namely Shafaq Cultural Centre of Tehran, is also located in this park. Parts of the park are dedicated to playgrounds and children's playgrounds. Other recreational facilities of Shafaq Park in Tehran include a restaurant and buffet, a prayer hall, toilets, several chairs in different parts of the park, art bazaars, and public sports equipment (“بررسی پارک شفق تهران با رویکرد منظر - آموزش حرفه ای و کاربردی معماری منظر” n.d.) ("Study of Shafaq Park in Tehran with a landscape approach - professional and practical training in landscape architecture" n.d. translated from Persian)

Figure 42. Shafagh Park, Map, Tehran, Iran ("Earth Versions – Google Earth" n.d.)

- **Residents' opinion**

The amount of vegetation in this park is satisfactory for the residents. It has good access, but unfortunately, it does not have ample parking. Has enough facilities to spend time with family. According to the interviewees, this park is very suitable for the elderly, and it is pretty cozy.

Figure 43. Shafagh Park View, Tehran, Iran ("بررسی پارک شفق تهران با رویکرد منظر - آموزش حرفه ای و کاربردی معماری منظر" n.d.) ("Study of Shafaq Park in Tehran with a landscape approach - professional and practical training in landscape architecture" n.d. translated from Persian)

4.2.14 Taleghani Forest Park

Taleghani Park was established in 1981. A year later, Taleghani Forest Park was made available to the public. This park covers a total area of about 310 thousand square meters. The forest landscape of the park and its clean air make this place suitable for many sports. Particular paths and sports equipment have been provided for these public activities in Taleghani Park. Basketball, volleyball, small flocks, and ping-pong and chess tables are available in various parts of the park. In addition to sports spaces and facilities, picnic pavilions, and a wooden bridge with many fans, there is a beautiful view of the fountains throughout Taleghani Park. Mosque, two playgrounds for children, toilets, benches, and numerous pavilions are other facilities of Taleghani Park in Tehran for visitors (“پارک طالقانی تهران n.d.) ("Tehran Taleghani Park | If you are looking for a rest in a quiet and cozy place, go to this park | Funzi" n.d.)

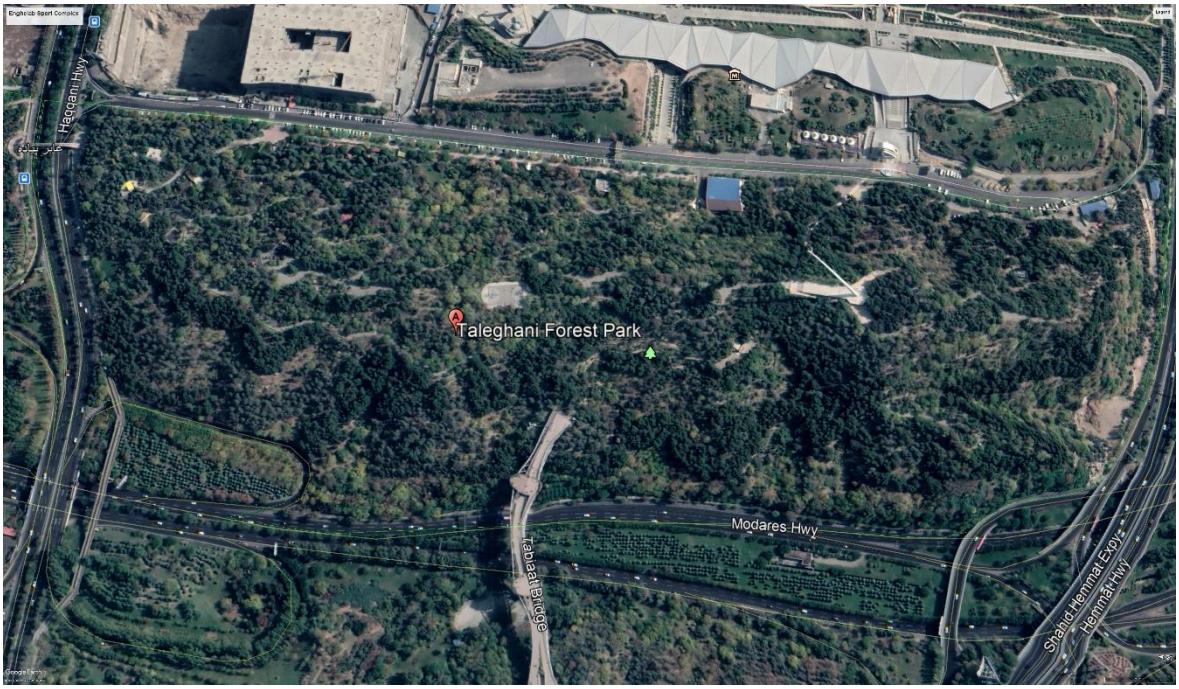


Figure 44. Taleghani Park, Map, Tehran, Iran (“Earth Versions – Google Earth” n.d.)

- **Residents' opinion**

This forest park is one of the most famous parks for the residents of Tehran. It has dense and satisfactory vegetation. It is very convenient to access, because it is close to public transport, has a parking lot with convenient access and access by a long bridge from another park. This park gives a sense of safety to the citizens due to the sufficient facilities such as suitable walking and cycling route and enough space for a picnic. However, with the location of this park on the slope and dense vegetation, it has a better climate.

Figure 45. Taleghani Park View, Tehran, Iran ("پارک طالقانی تهران |اگر به دنبال استراحت در جایی آرام و دنج هستید به این بوستان بروید |فانزی" n.d.) ("Tehran Taleghani Park | If you are looking for a rest in a quiet and cosy place, go to this park | Funzi" n.d.)

4.3 **Park's Situation in Three Phases**

After explaining all the parks and their location from the interviewees (residents of Tehran). It is noteworthy that in Tehran, Covid-19 occurred in three different phases, each of which has affected and changed. In this section, these spaces are assessed in three phases and then evaluated based on the main factors.

- **Phase One**

In a large and crowded city like Tehran when a big catastrophe occurs that causes chaos. It affects society in the first place because residents cannot focus on solving and organizing the problem. In the first wave of Covid-19, there was a lot of fear and anxiety in the city that made people avoid being in the community. Attention to some spaces was lost and became utterly insignificant, like parks and green spaces. In many interviews, people emphasized that they had no incentive to be in the community "I hate to look at parks and just try to pass them" (Adele, Personal interview, February 2021). So not only did they not go to these spaces, but also ignored them that showed a high level of fear and insecurity in the first wave.

- **Phase Two**

As time went on, the Covid-19 transmission continued throughout the city. It made people think about what solution could keep their mental health. While many citizens were less afraid of the disease, the remaining percentage reached the duality of creating a balance, looking for different solutions, and being active in the city without using public transportation. Residents started to try various parks in the city with a private car to increase physical activity and maintain relaxing moments with family and friends. As mentioned, many citizens turned to the neighbourhood and local parks because they had more security due to their proximity to home.

- **Phase Three**

As Tehran slowly entered the third wave, many changes took place. As long as the townspeople thought they had reached their routine. They noticed essential differences, the most important of which was the combination of different cultural classes. This critical problem occurred when the neighbourhood people faced the problem that many local parks do not meet the demands of the neighbourhood in terms of size, facilities, and number.

It happened at the same time when the number of visitors increased, and they chose these places to take their children out of the house and help promote the mental health of families. But here, the problems became more; many citizens turned to larger local parks and created insecurity for other residents that caused a percentage to stop going to their local parks. As a result, all this chaos in the third phase caused dissatisfaction, insecurity, and anger in many neighbourhoods.

4.4 Evaluating and Comparing in Every Factors

After explaining each park and all changes that have been made in these spaces in the three phases of Covid-19. In this section, based on the interviews, I obtained essential factors, according to which I evaluated and scored the parks. Based on all these elements, the result shows problems and help to improve the environment; the main factors through case studies in this thesis will be:

4.4.1 Feeling Safe

Therefore, in addition to the benefits that parks can have, they also have negative perceptions. Feeling insecure in parks can be related to many issues. It is worthy to note that parks can be the best place for crime due to design and location. Studies have shown that natural areas are sometimes considered scary, disgusting, and unpleasant. Parks are also perceived as risky when the sites are more densely vegetated, mainly when the vegetation is not apparently maintained, and crime is often cited as a reason to avoid densely wooded areas (Maruthaveeran 2016).

Table 5. Feeling Safe Factor among Parks (By Author)

Comparing **Feeling Safe** among all studied parks							
Urban Parks	Behesht-e Madaran	Parvaz	Enghelab Sport	Police Foresr	Jasmin Forest	Laleh	Taleghani
Grades	3	3	3	3	2	2	3
Local Parks	Nofel Loshato	Fadak	Qeytarieh	Sadaf	Sattarkhan	Shafagh	Mostafa
Grades	2	2	1	1	2	3	3

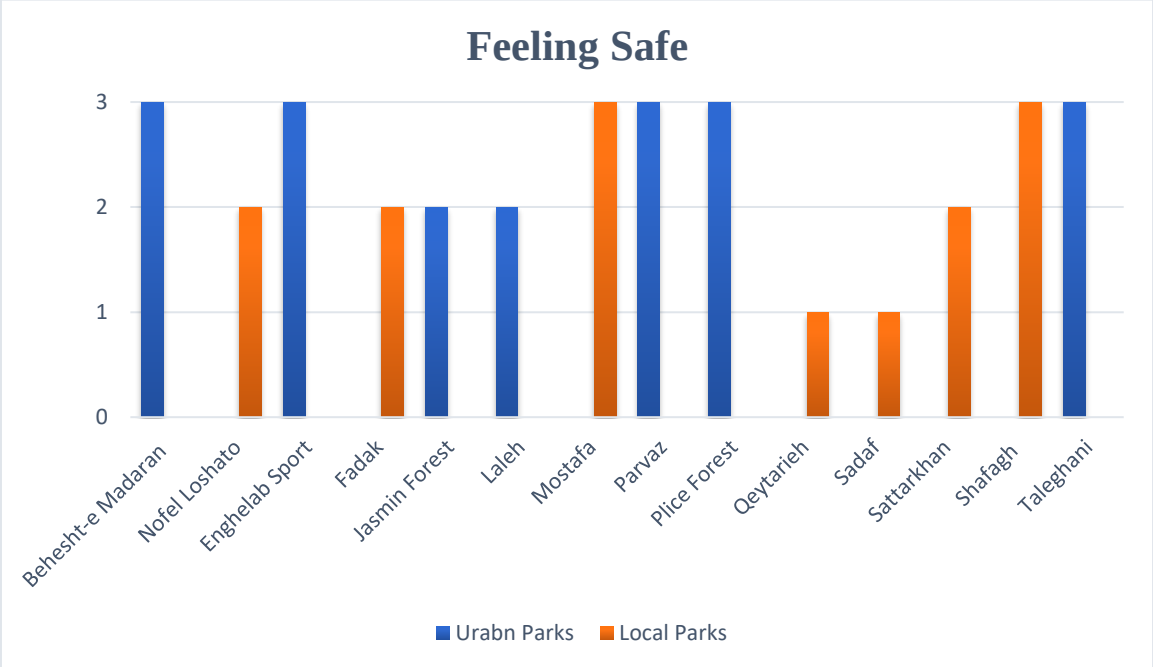


Figure 46. Feeling Safe Comparison among Parks (By Author)

4.4.2 Movement

Human movement in nature or open environments is measured using the paths or other elements. It can be very accessible and permeable or minimal. It can be considered in green spaces with the amount of vegetation and designated trails. When the movement is slow in the environment, it can express the liveliness and charm of that space (Bahriny and Bell 2020). Here, the assessment of movement in parks has been done and valued by interviewees that show the extent of restriction and freedom of these spaces in particular conditions.

Table 6. Movement Factor among Parks (By Author)

Comparing **Movement** among all studied parks							
Urban Parks	Behesht-e Madaran	Parvaz	Enghelab Sport	Police Foresr	Jasmin Forest	Laleh	Taleghani
Grades	3	3	3	3	2	3	3
Local Parks	Nofel Loshato	Fadak	Qeytarieh	Sadaf	Sattarkhan	Shafagh	Mostafa
Grades	1	1	1	1	2	3	1

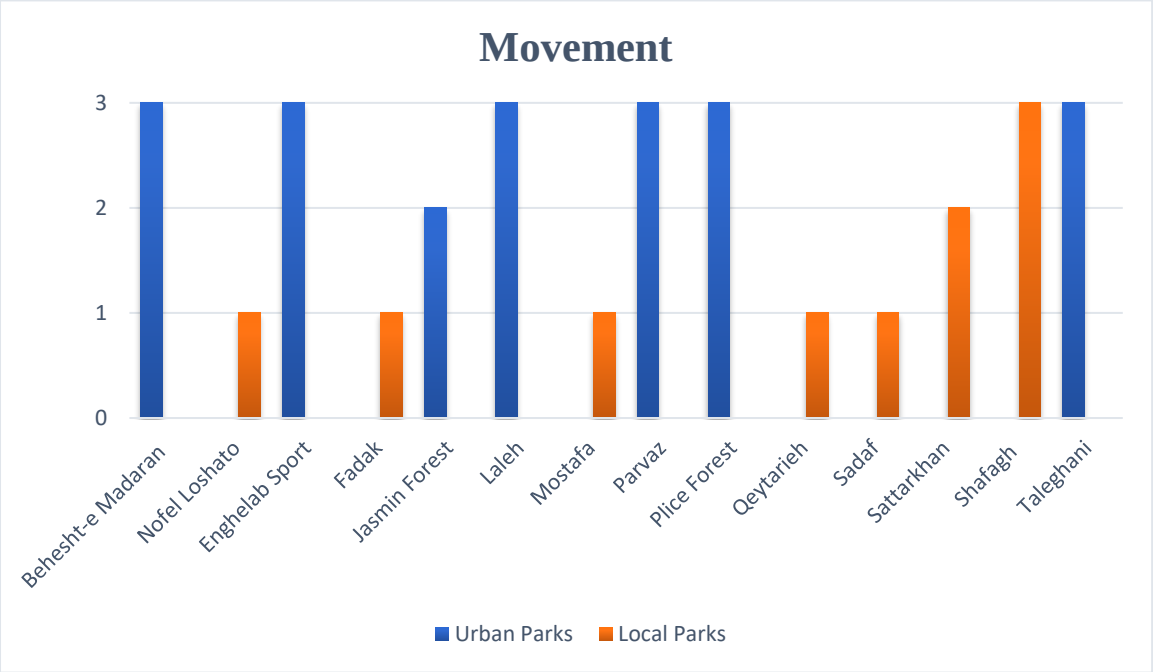


Figure 47. Movement Comparison among Parks (By Author)

4.4.3 Crowding

In the urbanization discussion, the congestion factor is one of the first factors to be considered. Crowds in public places can even be directly related to the movement factor. Crowding in big cities and public spaces is the element that also has a direct impact on comfort and security. It is measured based on the size of the population, the park's facilities, to how it is occupying and separating. Here, the result shows a crowding assessment of all these parks. It should be borne in mind that congestion in these particular conditions causes more insecurity in the space.

Table 7. Crowding Factor among Parks (By Author)

Comparing **Crowding** among all studied parks							
Urban Parks	Behesht-e Madaran	Parvaz	Enghelab Sport	Police Foresr	Jasmin Forest	Laleh	Taleghani
Grades	3	1	2	1	2	1	1
Local Parks	Nofel Loshato	Fadak	Qeytarieh	Sadaf	Sattarkhan	Shafagh	Mostafa
Grades	3	3	3	3	2	1	3

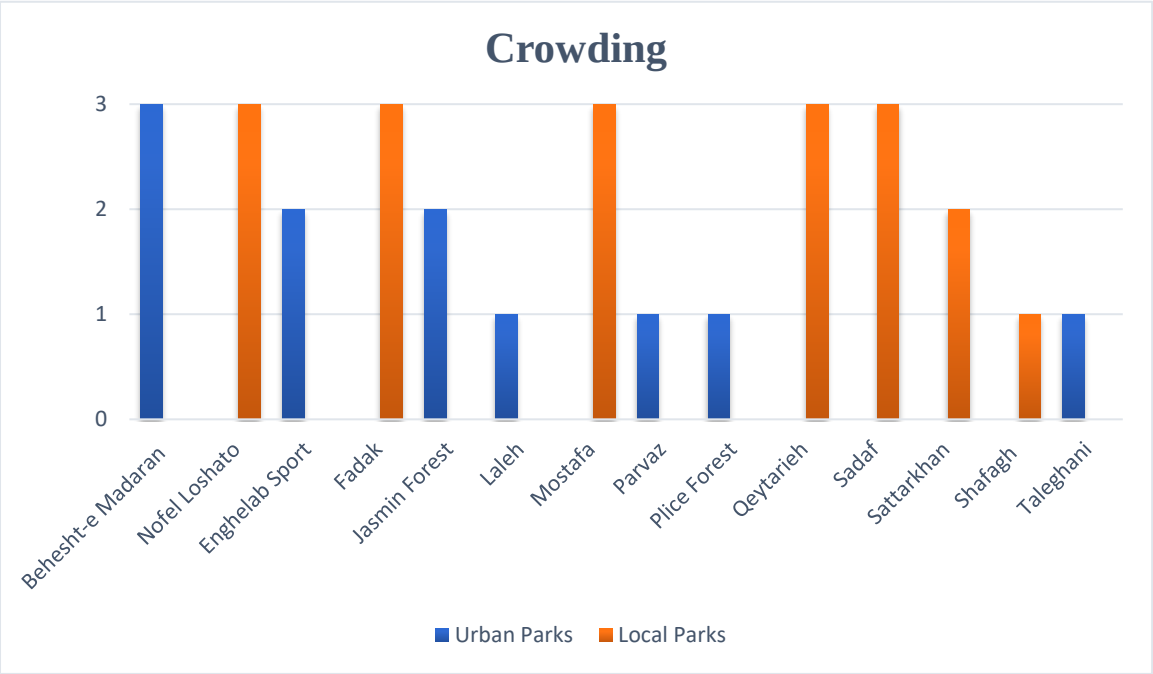


Figure 48. Crowding factor comparison among Parks (By Author)

4.4.4 Size and Distance

Distance and size of parks are the leading and prominent factors in visiting parks. Satisfaction with usable urban public spaces increases when it comes to size and proximity. Like urban green spaces, which are usually more frequent when they are larger and closer to residents' homes (Tu et al. 2020). Here, all evaluations have been done in Corona conditions; the average value of each park in terms of size and distance was done by citizen's opinion in the following tables. The result shows how these spaces have acquired the best and worst position in Covid-19 according to these two factors.

Table 8. Size and Distance Factors among Parks (By Author)

Comparing **Size and Distance** among all studied parks							
Urban Parks	Behesht-e Madaran	Parvaz	Enghelab Sport	Police Foresr	Jasmin Forest	Laleh	Taleghani
Grades	2	3	2	2	2	3	2
Local Parks	Nofel Loshato	Fadak	Qeytarieh	Sadaf	Sattarkhan	Shafagh	Mostafa
Grades	2	2	2	2	2	3	2

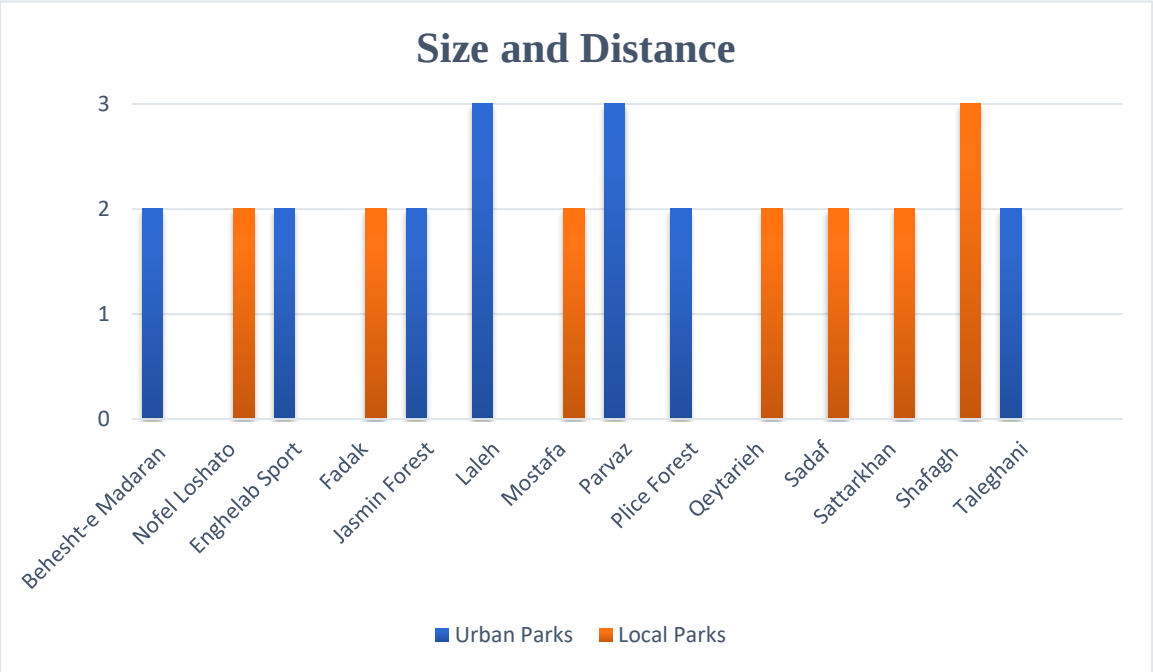


Figure 49. Size and Distance Comparison among Parks (By Author)

4.4.5 Children's Friendly

Attention to child safety is one of the inevitable factors in the discussion of large societies. Children's health at the community level, especially in large cities, can be ensured in open spaces. However, the shortcomings of open urban areas prevent the child from experimenting and learning from his surroundings. It can be seen in urban green spaces where children's play space is the best place for children to work and maintain their mental health (Behravesh, Alizadeh, and Jafari 2020) In this section, by evaluating this factor in the particular situation, I have given points to each of these parks regarding citizens' level of satisfaction with the space for children.

Table 9. Children's Friendly Factor among Parks (By Author)

Comparing **Children's Friendly** among all studied parks							
Urban Parks	Behesht-e Madaran	Parvaz	Enghelab Sport	Police Foresr	Jasmin Forest	Laleh	Taleghani
Grades	3	3	3	3	1	3	3
Local Parks	Nofel Loshato	Fadak	Qeytarieh	Sadaf	Sattarkhan	Shafagh	Mostafa
Grades	1	1	1	2	1	3	1

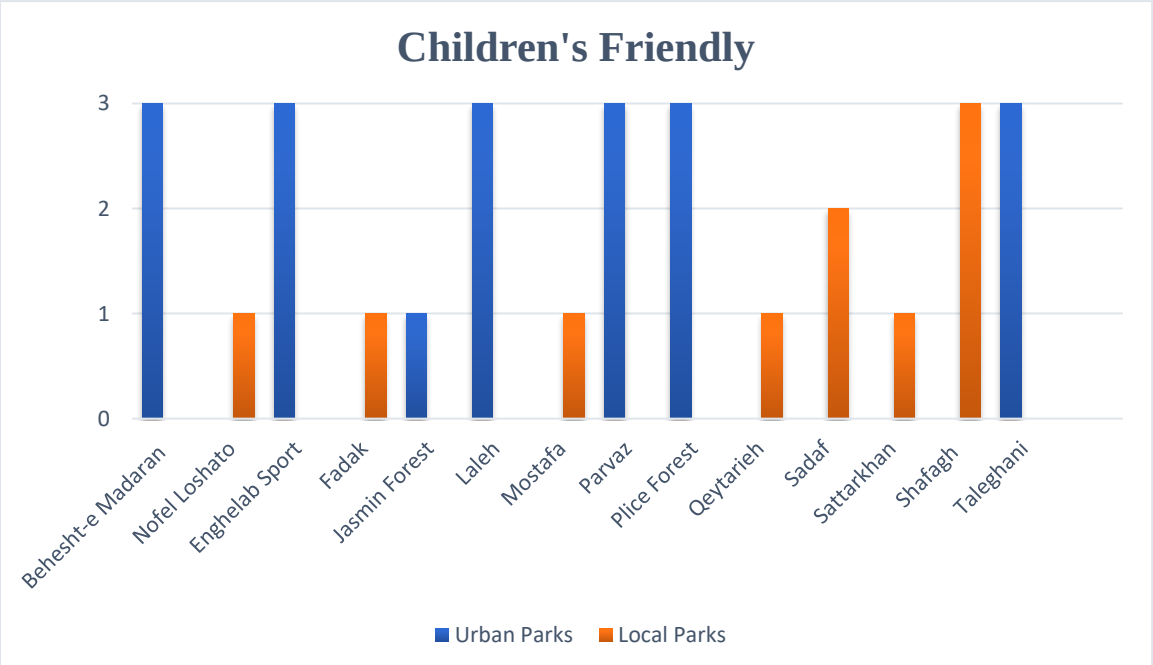


Figure 50. Children's Friendly factor Comparison among Parks (By Author)

4.4.6 Comfort

People and their environment are the main factors affecting comfort and well-being in urban environments. Half of the world's population lives in cities. It puts pressure on infrastructure and facilities, increasing problems such as not having enough space to be in the community and open spaces such as parks, and causes crowding in some areas. All these points are directly related to the welfare of society (M. B. Johnson, Iweka, and Adebamowo 2018) Here, by evaluating all the parks according to the comfort factor, the result shows spaces are suitable or not for the needs of the people in Covid-19 condition.

Table 10. Comfort Factors among Parks (By Author)

Comparing **Comfort** among all studied parks							
Urban Parks	Behesht-e Madaran	Parvaz	Enghelab Sport	Police Foresr	Jasmin Forest	Laleh	Taleghani
Grades	3	3	3	3	1	2	3
Local Parks	Nofel Loshato	Fadak	Qeytarieh	Sadaf	Sattarkhan	Shafagh	Mostafa
Grades	2	1	1	1	2	3	1

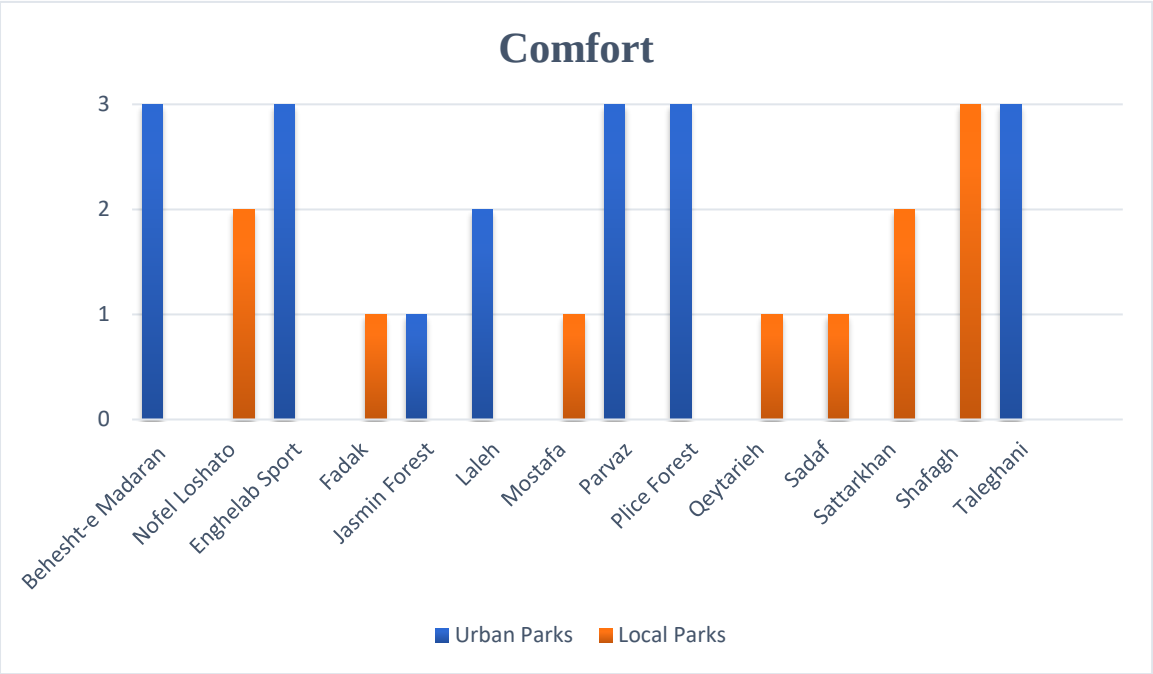


Figure 51. Comfort factor Comparison among Parks (By Author)

4.5 **Summary**

In the result section of this chapter, data analysis was performed. After collecting information about the location of each park in current condition, they were assessed according to the interviewees' views. In the meantime, the situation of the parks at Covid-19 is expressed in three phases, which has helped to achieve several vital factors. Last but not least, I reviewed and evaluated each of these factors individually with all the parks to compare them with each other and discuss the results of this comparison in the next chapter.

5. CHAPTER FIVE: DISCUSSION AND CONCLUSION

5.1 **Discussion**

According to the results, this section of Tehran has a list of urban and local parks, which show that these spaces have high and low values. These tables help us understand how parks can perform best in certain situations such as Covid-19 and provide the best advice to solve this problem. Taking into consideration the proposed factors that lead to improved quality of life it can be shown that some of these parks at the city and local levels have shortcomings as they do not meet the needs of residents. It is surprising how, on average, urban parks meet the needs of the people. However, despite their small size and dispersion, local parks have not been able to meet the needs of residents.

Table 11. Urban Parks with highest value in factors (By Author)

Urban Parks	Factors	Value
Behesht-e Madaran	Safety, movement, size, children's friendly, comfort, crowding	3
Enghelab Sport	Safety, movement, size, children's friendly, comfort, crowding	3
Laleh	Safety, movement, size, children's friendly, comfort	3
Parvaz	Safety, movement, size, children's friendly, comfort	3
Police Forest	Safety, movement, size, children's friendly, comfort	3
Jasmin Forest	Safety, movement, size, children's friendly, comfort, distance	1
Taleghani	Safety, movement, size, children's friendly, comfort	3

Table 12. Local Parks with lowest value in factors (By Author)

Local Parks	Factors	Value
Nofel Loshato	Safety, movement, size, children's friendly, comfort	2
Fadak	Safety, movement, size, children's friendly, comfort	1
Shafagh	Safety, movement, size, children's friendly, comfort, distance	3
Mostafa	Safety, movement, size, children's friendly, comfort	1
Qeytarieh	Safety, movement, size, children's friendly, comfort	1
Sadaf	Safety, movement, size, children's friendly, comfort	1
Sattarkhan	Safety, movement, size, children's friendly, comfort	2

As shown, there are some factors that prevent all places reaching a satisfactory provision of services. Valuable studies have shown that the people of Tehran have given the highest score to large urban parks. In the feedback from Tehran residents, many points were made, including distance from home. Table 11 illustrates that the "Distance" does not have the highest score critically because residents of Tehran were not very active and saw the most problems in urban parks based on their distance from home. Simultaneously, city parks are the best place to spend time and stay healthy in a particular situation like Covid-19. While at the beginning of this thesis, I asked a question: What is the role of parks in people's health and well-being during the time of Covid-19? And the answer to this question has changed a lot at different points in time during the Covid-19 pandemic. It has changed residents' expectations towards these spaces.

At the same time, the residents of Tehran started the first stage of this disease with the initial fear of being in society. Gradually, people began to be in the society, and all residents could safely visit their favourite parks to maintain good mental and physical health. At the same time, the situation changed slowly as society began to lose control due to lack of restrictions,

and fears of disease transmission in the city had increased. This problem has led the city residents to start using local green spaces where parks are small and close to residents' lives to reduce the fear of being in the community.

The aim of this study is to examine the people's health and well-being in Tehran in relation to their park use during the Covid-19 pandemic, so this discussion is not specific to a particular group and includes all ages and strata. As residents moved to their small local parks to create a safe space for children to play, they encountered a significant problem called "Crowding," which was one of the most critical problems people raised. Turning to local parks created a sense of security for residents. However, visitors to these small parks increased reflecting on the fact that many regional parks in Tehran do not meet the population in terms of size and number. The results show that problems arose due to issues such as "Crowding" and "Distance" being achieved, such as the lack of adequate facilities in local parks and neighbourhoods. Given all of the issues mentioned, the "Crowding" debate is one of the most critical aspects in the Covid-19 situation, contributing to the further transmission of this disease, as others have already shown in a study in England (T. F. Johnson et al. 2020). Their models in different residential areas show how individual green spaces attracted large crowds due to their well-design and adequate facilities, as long as people had to travel to those spaces. So, the increase in visitors has increased the speed of transmission.

But on the other hand, in patchy green areas in different neighbourhoods with low residents, the lowest percentage of disease transmission has occurred because visitors had many spaces to be able to distance themselves from others. According to the research conducted in this study, it is fascinating and surprising to find that the "Crowding" within regional parks, is not the only major issue. The population of each nearby neighbourhood together with the number of, and dispersion of, the facilities they can provide is also important. It is a critical argument made by the residents that cannot be found in any other study on Covid-19 and park use.

Meanwhile, by examining local parks, the analysis can show that Tehran has very suitable urban parks, which have been shown in various studies (Bahriny and Bell 2020). By examining many examples In this study, it has been concluded that urban parks are above average in terms of security, welfare, facilities, comfort, etc compared to small and local parks. People have needed them, but they have a problem with distance from home. I can conclude that under the conditions of the Covid-19 pandemic; the welfare and security of the people are provided by spending time in their place of residence.

So, if the spaces are flexible enough to provide the population with adequate facilities the social distances can be observed, and disease transmission prevented. So, this can increase people's health. However, this study aims to find the necessary factors during Covid-19 time to maintain the health and well-being of city residents.

5.2 **Conclusion and Recommendations**

This study aims to achieve an improved role for the parks in Tehran for the health and well-being of residents during the Covid-19pandemic, where some parks seem to be very suitable in terms of size and location, they were less used due to the distance from home. While small parks lacked facilities, more was demanded of them due to short distances from their houses. The specific research questions were:

1. How did people use green areas and parks in Tehran during Covid lockdown time?
   I found that the use of parks by the people of Tehran occurred during the Covid-19 pandemic in three different periods. During the first wave, visits to parks have declined due to fears of an unknown disease. When people became more aware of the condition, people returned to the parks. They turned to large urban parks until the disease grew in severity and limited people to stay in their local areas.

2. Did people use the different parks in the same way or differently?
   While Covid-19 was on the rise in Tehran, many city dwellers left their favourite and permanent parks and moved to local parks near where they lived.

3. Which parks did they visit / did they visit more or less than before?
   I found that the fear of long distances and being in public in these circumstances kept residents from travelling to many suitable parks and led them to use local and neighbourhood parks. So many residents lost the ability to use their permanent green spaces.

4. What kind of activities did they do there?
   While there are extensive amusement parks in large urban parks, Tehran residents turned to local parks with limited facilities for safety. But the best use of these spaces

has been for children to play and spend family time. I found that the limited activities they could do included walking and a little exercise.

5. How did they feel about it? (mental well-being, safety)
   At the height of the Covid-19 pandemic, I found that the people of Tehran began various activities in local parks. As the number of visitors increased, the first feeling of insecurity for families was when they felt that the hustle and bustle of a small local park did not allow children to play freely. Being in the scattered local parks lost their charm for the local neighbourhood residents because they felt an increase in fear and insecurity in these spaces. In addition, these spaces did not have enough facilities.

6. Are the parks suitable and satisfactory for people?
   Here the answer is no. Residents have repeatedly used local and neighbourhood parks, but the fact is that these parks do not meet the needs of each district, and the facilities of these parks cannot meet the needs of high numbers of visitors. Local parks can only meet the needs of residents if their number increases.

My recommendation are:

- Creating Pop-Up parks for residents in different districts to increase the number of places for their activities.
- Installing new benches to build up the provision of public seating. The benches should be placed in areas that are either quiet or lack equipment.
- Provide a more open street that temporarily provides a safe space for social activities for children to stay healthy.

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7. APPENDIXES

7.1 Appendix 1. Interview Result

Parks	Picture	Location	Size	Portion of Green	Access	Condition	Perception and Opinion during Covid-19
Behesht-r Madaran Park		North-east	19 hectares	Satisfactory green space and desirable vegetation that makes the space for sports quite enjoyable.	It has access from 6 main and local streets	This park has a sports complex that is designed with full facilities. It has proper sports equipment and a suitable and sufficient walking path. Fully open space and equipped for leisure	The proper place to feel safe in the second wave got crowded with no distance unfortunately, they closed it due to a lack of proper management
Nofel Loshato Park		East	25,026m^2	Satisfactory green spaces and enough to feel safe	It has access by public transport and due to its proximity to the department store, it is possible to use the parking lot	Proper access, low pollution in the space, suitable recreational and sports features such as children's playground and sports equipment. It has a central waterfront and a convenient place to spend time	A suitable place for elders At first, due to a lack of attention to health protocols Getting crowded and as it is beside the big market they started to avoid going there or just pass park by the side. Lack of feeling safe and secure

Enghelab Sport Complex		North	130 hectares	Satisfactory	2 accesses from main street	Convenient access Adequate sports and recreational facilities Proper hiking trail with adequate vegetation	Clean space Has a disinfection chamber at the entrance to the complex Slowly closing sports and entertainment venues such as restaurants and cafes
Fadak Park		East	-	Satisfactory	2 accesses from main streets but not suitable with car, hard to find parking lot	With enough equipment, has a waterfall, a suitable walking path Cafes, restaurants, soccer fields, and children's playgrounds. Satisfactory for leisure and sports	In different wave of Corona, situation changed in park. They started to close café and restaurant inside then as this park is local, it started to be crowded and they couldn’t use that park anymore.
Jasmin Forest Park		East	1400 hectares	Medium, less vegetation compared to other forest parks	4 accesses from main highways in east	No proper signs, unsafe children playground, no proper paths, empty place for short time leisure	Big changes from the first wave to the third wave start with fear and eventually lead to the crowd. But due to the size of the place, it is a good place to go

Laleh Park		Centre	35 hectares	Satisfactory	Easy access with car and public transportation	Quite a big place with many facilities such as museum, gallery, market, sports centre, and children playground. Interesting green spaces like a Japanese garden	More empty to feel safe, the guards were not allowed to enter very easily and the toilets were locked
Mostafa Park		East	228 m^2	Satisfactory	Easy access	Safety, Proper park furniture with proper care of green space	Due to the fear of air pollution in that area and the crowds (which cause the rapid transmission of the disease), they stopped visiting Pak.
Parvaz Park		North	10 hectares	Satisfactory	Easy access	Perfect views because of different slops and proper parking lots with access and suitable for children	Due to good location and size, still safe and proper for using
Police Forest Park		East	51 hectares	Satisfactory even in type of trees	Easy access with enough parking spaces	Four big parking spaces, full of slops which make different views, well equipped, children playground, museum, sport hall, proper paths for walking and cycling	Due to proper facilities and size of the place visitors can have their own activities there.

Qeytarieh Park		North	122,206 m^2	Satisfactory	Easy access with bad parking space	Well equipped, proper path for walking, training spaces, suitable for different activities, open market, good enough for locals.	Due to different phases of Corona the park condition changed several times. Finally, now it is in the condition that locals afraid to use it as a routine because of mix culture and people who go there
Sadaf Park		North-east	29,467 m^2	Satisfactory	Easy access from highway and main streets	Plenty of parking space, not big enough to answer all population in neighbourhood, as a local park good enough to spend time with family	Feel unsafe, feel anxious when It was crowded and to use when it was empty enough. Feel uncomfortable to use sport equipment.
Sattarkhan Park		West	7000 m^2	Medium	One access from main street and local access	No parking space, crowded, good place for children and training	It is possible to operate in small spaces, but in general, due to excessive crowding, reduces the percentage of comfort and security

Shafagh Park		Centre	16,867 m^2	Satisfactory	Easy access with no proper parking lot	Two library, children playground, café and cosy. Call it park for elders and its suitable for family	Due to the lack of crowds in the various corona waves, it has not caused any problems for residents and visitors, and all visitors still use the park in the same way as before.
Taleghani Forest Park		North	310,000 m^2	Satisfactory and quite dens	Easy access with private and local transportation	Located on slop in City which gives good view, proper path for walking and cycling, well equipped, suitable for small family and friend gatherings	Due to size and accessibility to other park(Abo Atash) visitor feel safe to have their activities there